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ABSTRACT

A study was conducted to determine if vocational teachers in Massachusetts are receiving enough training and the kinds of training they need to be competent in the classroom. A variety of standard data-gathering techniques were used to collect specific information from vocational teachers, colleges, local schools, and the state department that approves vocational teachers and administrators in the overall process. In addition, vocational education laws, regulations, studies, public documents, and internal educational department documents as well as literature were reviewed to place specific findings into broader policy context. Based on the study, four major conclusions were reached and recommendations were made: (1) Confusion exists about whether the vocational teacher is primarily a teacher or a tradesperson; therefore, the Massachusetts Division of Occupational Education should endorse the concept that vocational teachers are primarily teachers and secondarily tradespersons. (2) Provisional teachers are older employed adults who are not well served by the usual required preservice teacher program; therefore, a performance-based curriculum should be adopted for vocational teacher approval. (3) Strong feelings exist that practice teaching should be part of teacher training; therefore, the first year of vocational teaching should be established as an internship year. And (4) an insufficient number of qualified applicants is available in some program areas; therefore, recruitment efforts should be increased. (KC)

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LEARNING THE TEACHING TRADE:

A study of vocational teacher training in Massachusetts

Under contract to:
The Massachusetts Department of Education
Division of Occupational Education
Boston, Massachusetts

Fall 1981

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FORWARD

This study of vocational teacher training in Massachusetts was conducted by the Logos Research Institutes during the Summer and Fall of 1981. Teacher training and content for vocational instructors was examined in the context of the Massachusetts Vocational Teacher Approval Process and in the light of current educational research and exemplary practices.

This study is organized into two major parts. The first part presents the major conclusions, recommendations, and directions derived from the study. A model for the preparation of vocational teachers for Massachusetts is developed and the material in this part is sharply focused upon policy issues.

Part One contains an Executive Summary for the busy reader which describes the purpose of the study, the policy focus of the study, and the major conclusions of the Study. It also contains an introduction which describes the context and issues surrounding the study. Finally, Part One describes the major observations and recommendations of this study. Included are sections on the needs of adult learners, Performance-Based Teacher Education modular curricula, a model particular to the needs of Massachusetts, and a section on directions for vocational teacher training in Massachusetts.

Part Two is a more technical presentation of the data. This second part of the work describes the study methodology and presents the study findings. The study methodology describes the goals and objectives of this study and the procedures and approaches used in conducting the study. Data sources, data collection techniques, and the study design are described in detail. The findings are presented in both tabular and narrative form in the areas of historical background, the state colleges and the training delivery system, the vocational teacher training presently provided, and the approval process for vocational teachers in Massachusetts.

The common thread throughout this study is the role of the vocational teacher. This study examines how that role is perceived by the vocational teacher and by those who employ vocational teachers, what is expected of the vocational teacher and what preparation and support is available to help the vocational teacher meet those expectations, and, finally, what changes can be expected which will affect the role, the expectations, and the needs of the vocational teacher in Massachusetts.

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PART ONE:

STUDY RECOMMENDATIONS AND DIRECTIONS

I. EXECUTIVE SUMMARY

The system for delivering public education in this country is presently undergoing fundamental examination and change. A variety of legislative, judicial, and social factors have redefined and increased the expectations of the educational system, while economic factors have put a limit on resources available to meet those expectations. The teachers, the individual schools, the school systems, and the state are all held increasingly accountable for the professional services they supply, while the resources for preparation, training, support, and maintenance within that system are dwindling. Cost reductions from decreased enrollments appear to be more than offset by cost increases for new, improved, and mandated educational services and by increased costs of operation.

Therefore it is essential that all available resources are used to their best advantage. Needs and strategies to address those needs must be carefully assessed and priorities must be set so that resources can be allocated effectively. In recognition of these factors, the Commonwealth of Massachusetts requested that the present system used to prepare and train vocational teachers for the secondary schools be examined.

A. The Purpose of this Study

The purpose of this study was to determine if vocational teachers in Massachusetts are receiving the kinds of training they need to be competent in the classroom and if they are receiving enough training to support their classroom efforts. This study examines the present system for training vocational teachers within the context of the Massachusetts Vocational Teacher Approval Process. This report presents analysis of the effectiveness of vocational teacher training in the state and makes recommendations toward improved vocational teacher training in Massachusetts based on study findings, significant issues, state and national trends, and exemplary practices.

B. Policy Focus

A study of this kind is most useful to the decision-makers when it fulfills the dual mandate of providing *specific information* on a program's activities while providing *broader observed relationships* among the organizational issues and outcomes that are affected by policy decisions. This study has attempted to integrate both of these mandates.

In order to systematically gather specific information on the effectiveness of vocational teacher training in Massachusetts, four study objectives and fifty related questions were formulated and incorporated into a study design. A variety of standard data-gathering techniques were used to collect specific information from the vocational teachers who receive the training, the colleges which provide the training, the local schools which employ the trained vocational teachers, and the state department which approves vocational teachers and administrates the overall process.

A review of vocational education's laws, regulations, studies, public documents, and internal education department documents as well as a review of current literature on related topics or exemplary practices was conducted in order to place specific findings into the broader context of evolving vocational education policy.

Based upon the evidence of the study, conclusions were reached and a variety of policy and action recommendations specific to vocational teacher training in Massachusetts were formulated.

C. Major Conclusions and Recommendations

Following are four of the major conclusions of this study which cut across or touch upon all aspects of vocational teacher training in Massachusetts.

> *Conclusion:* There is confusion and disagreement concerning the role of the vocational teacher and whether that person is primarily a teacher or a tradesperson.

Much confusion and difference of opinion exists about whether practicing vocational teachers are tradespeople first or teachers first. These conflicting viewpoints exist throughout the entire educational community and have led to unfocused or inconsistent treatment of vocational teachers, primarily in the area of teacher training. The concept of vocational teacher as tradesperson first is in conflict with the broadened scope of vocational education over the last fifteen years. Some vocational teachers have had difficulty as tradespeople interacting with special needs students in particular. The tradesperson's criteria might often be whether or not a student would practice the trade while the special educator may claim that learning some of the skills is of value to the special needs student. As teachers, vocational instructors must be trained to relate to the educational needs of all their students. Therefore, it is reccommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD ACTIVELY ENDORSE THE CONCEPT THAT PRACTICING VOCATIONAL TEACHERS ARE PRIMARILY TEACHERS AND SECONDARILY TRADESPEOPLE.

• • •

> *Conclusion:* Provisionally approved vocational teachers are older, employed adult learners who are not well-served by the traditional, undergraduate, pre-service modeled programs presently offered by the colleges and required by the Department of Education.

The current system of vocational teacher training in Massachusetts is not meeting the classroom needs of provisionally approved vocational teachers. The teacher training programs conducted by the state colleges for vocational teachers are based on a traditional undergraduate, pre-service model. However, in

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Massachusetts, vocational teachers can be hired and often teach without any teacher training before entering the shop or classroom. As fully employed adult learners who are already teaching in the classroom, provisionally approved vocational teachers need a teacher training program based more upon an inservice model. Their need is for practical competencies to be applied in their classrooms and their need is immediate. Therefore it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD ADOPT A PERFORMANCE BASED CURRICULUM FOR SATISFYING THE 18 CREDIT TEACHER TRAINING REQUIREMENT FOR FULL APPROVAL AS A VOCATIONAL TEACHER.

• • •

> *Conclusion:* Despite the potential problems of implementation, there is a strong feeling at all levels that some kind of practice teaching element be incorporated or made available in the vocational teacher approval process.

The current system of vocational teacher training does not include a provision for practice teaching. Although arguments can be made concerning the practicality of practice teaching for full-time employed vocational teachers, it is clear from this study that there is a strong desire at all levels of vocational education in the commonwealth for a practice teaching element to be incorporated or made available in the teacher training process. Therefore, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD CONSIDER THE FIRST YEAR OF TEACHING AS AN INTERNSHIP YEAR. THE DIVISION SHOULD ISSUE A PROVISIONAL CERTIFICATE OF INTERNSHIP UPON COMPLETION OF THE COMPETENCY TESTS AND THEN, UPON SUCCESSFUL COMPLETION OF ONE SCHOOL YEAR (1080 HOURS) OF SUPERVISED TEACHING AS AN INTERN, THE CANDIDATE WOULD BE ELIGIBLE FOR PROVISIONAL OR FULL APPROVAL AS APPROPRIATE.

• • •

> *Conclusion:* An insufficient number of qualified applicants come forward in many trade areas limiting the choice of the most promising vocational teacher candidates.

Finally, a major weakness in the current vocational teacher approval process is the lack of a sufficient number of qualified applicants [illegible] many trade areas from which to choose the most promising teacher candidates. An informal, uncoordinated network of teacher recruitment, primarily by vocational educators and tradespeople at the local level, is the major source of information for individuals seeking information on how to become a vocational teacher. The Division of Occupational Education plays a more passive role in teacher recruitment, answering questions of those who voluntarily seek them out. An active teacher recruitment role is necessary if the Division of Occupational Education is to expand the pool of potential vocational teachers. Therefore, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD DEVELOP AND IMPLEMENT A STATEWIDE PUBLIC RELATIONS CAMPAIGN TO RECRUIT VOCATIONAL TEACHERS. THE PUBLIC RELATIONS CAMPAIGN SHOULD INCLUDE THE USE OF PROFESSIONAL QUALITY VIDEO CASSETTES THAT CAN BE DISSEMINATED UPON REQUEST, PROMOTIONAL PAMPHLETS, AND INFORMATION BOOKLETS ON THE APPROVAL PROCESS.

II. INTRODUCTION

A. The Context of Change

The statewide system to provide training for vocational teachers in Massachusetts has not been examined across the board and in depth since major alterations to the system were begun a decade ago. During that decade there was a rapid expansion in the number of students receiving vocational education services and in the number of vocational education options available to those students.

Important systemic changes were taking place during this period of intense growth. Reorganization within the State Department of Education took place with the establishment of regional educational centers. Many regional vocational schools were established and built to house more and diverse Chapter 74 vocational programs under a single roof. The Office of Professional Development was created and responsibility for vocational teacher approvals became consolidated in that office. Provisions for training vocational teachers were expanded and transferred to colleges that wished to offer appropriate courses. Both the curricula and the requirements for this training went through changes of content as well as format.

Economic and social pressures, legal requirements and technological advances have all contributed toward these ongoing changes. For example, federal and state laws have been promulgated which mandate equity and access to appropriate educational services for all students. Particular laws and regulations affect the provision of special education and bilingual education services as well as the provision of educational services for minority students. Issues of equity and access related to gender and traditional male or female shop roles have also prompted or required changes in the schools.

The need to prepare vocational teachers to effectively deal with the needs of all their students has existed for some time. Identification of this specific training need may have been precipitated by the influx of less traditional students into vocational schools, but this study shows that the need for more effective training existed long before these students began to enter the schools.

The result of these internal and external changes to the vocational education delivery system in Massachusetts is that many roles, rules, and requirements are in need of redefinition. In particular, classroom practices and expectations must be matched against the training provided for new vocational teachers.

Vocational teachers in Massachusetts, who generally have no extensive pre-service training, have the right to expect that the programs and coursework they are required to take will address their real-world situation. They have the right to expect their training to cover the techniques and materials they need in the shop. They have a right to expect that their training will provide them with the pedagogical skills they require. They have a right to expect support in learning to address the situations they must deal with *in the classroom*. Presently, these expectations are not consistently met.

Consequently, this study has endeavored to identify those elements in the vocational teacher training process which have changed or which are in need of change in order to present a vocational teacher training model which effectively meets the needs and expectations of new Massachusetts vocational teachers, the students they serve, and the system they represent.

B. The Credentials to Teach

Between 1968 and 1976 vocational education experienced tremendous growth across the nation and large building programs were undertaken. Massachusetts built sixteen new regional vocational schools during this period. With the rapid growth of vocational education, the old system for approving teachers became cumbersome. The need for standardization and better coordination became apparent and the Office for Professional Development was established to address that need.

Within the Division of Occupational Education, the Office of Professional Development was established in 1971 to coordinate approval of vocational education teachers and to administer federal Educational Professions Development Act funds. Prior to 1971, each major area of occupational education, i.e., trade and industry, vocational agriculture, distributive education, home economics, and allied health, had state level supervisors who were responsible for approving instructors in their respective areas.

The Office of Professional Development oversees the administration of the vocational education teacher approval process. A teacher obtains provisional approval from the office by documenting the necessary educational and work experience requirements for his or her trade area and by passing both a written and a practical trade competency test. A vocational teacher may then begin to teach with provisional approval status, but must complete 18 required college credits within three years to obtain full approval status to continue teaching. Once a vocational teacher has completed the teacher training credits and obtained full approval status, professional improvement requirements must be met on a regular basis in order to maintain full approval to teach.

The Office of Professional Development of the Division of Occupational Education sets the specific standards and requirements for teacher approval within the mandated state vocational education regulations. The office is also responsible for obtaining all documentation on each teacher's approval status, and is responsible for aiding local educational agencies in identifying approved vocational teachers to fill vacancies in the various trade areas.

C. Tradespeople or Teachers?

A major question emerged in the course of this study which touched every area of the study and which should be addressed by every vocational educator in the state. "Are vocational teachers tradespeople first, or are they essentially teachers?" The answer to this question relates directly to the choice of appropriate selection and approval processes, the design of adequate training and support, and the structure for bringing "state-of-the-art" information to the classroom. It is the premise of this study that vocational teachers, no matter their background or trade area of expertise, are teachers who are selected, approved, trained, and upgraded in terms of their classroom or shop efforts and needs.

The role and definition of the vocational teacher in Massachusetts needs to be clarified at all levels of the vocational education system. There is little consensus among vocational teachers concerning whether they view themselves as "teachers first" or "tradespeople first" and administrative-level vocational educators rarely address this question directly. The result is confusion in the goals and in the methodology surrounding the training of vocational teachers for their roles in the vocational schools and within the profession of vocational education.

Traditionally vocational teachers in Massachusetts have been selected first on the basis of their trade experience and then provided with whatever training was felt necessary to make them teachers. This process worked adequately as long as the primary purpose of vocational education was to prepare students for specific trade needs in industry. However, with the broadening of the scope of vocational education to include less traditional student populations and services, new issues emerged. Teacher preparation must include information and strategies to address those issues. Those issues cut across all the trades.

Vocational teachers have acquired and maintained a separate status from academic teachers. Their pathway to the classroom is different and the requirements they must fulfill before they can teach are different. Most vocational teachers lack pre-service educational training, but are required to have years of previous time in trade. Vocational teachers receive "approval" to teach according to a specified process; academic teachers receive "certification" through a different process.

However, no matter what entrance or selection criteria are utilized, both vocational and academic teachers are hired and paid to teach students. Academic teachers must transmit course content to their students; for vocational teachers, preparation for employment must be integrated as part of the course content. Overemphasis on these differences, rather than on the commonality of the teaching mission has helped to erect and maintain artificial barriers between the vocational teacher and the academic teacher. In order to clarify the mission, the requirements, the needs, and the expectations of the vocational teacher, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD ACTIVELY ENDORSE THE CONCEPT THAT PRACTICING VOCATIONAL TEACHERS ARE PRIMARILY TEACHERS AND SECONDARILY TRADESPEOPLE.

III. MAJOR OBSERVATIONS AND RECOMMENDATIONS

The vast majority of vocational teachers presently receiving teacher training in Massachusetts are older, are re-entering school after a considerable time, and are otherwise different from regular education teachers who acquire their pedagogical skills through a pre-service program of college instruction. The vocational teachers' needs are different because their criteria for recruitment and selection to teach is different and the approaches toward addressing those needs should reflect the differences.

Modern adult learning theory encompasses a variety of such approaches. One such approach is competency or performance-based education. Based upon the findings of this study, a series of recommendations are proposed toward the implementation of a performance-based teacher education modular curriculum adapted to the specific needs of vocational education in Massachusetts.

A. The Needs of Adult Learners

Within a college setting, the responsibility for deciding what is to be taught and how it is to be learned traditionally belongs to the college instructor who is the authority by virtue of position, education, and experience. The student is traditionally considered a dependent, passive recipient who is subject to the direction of the instructor. This "higher education" approach is reflected by the college coursework required of vocational teachers in Massachusetts. The 18 credit sequence required for approval as a vocational teacher assumes that traditional teacher training formats and institutions are best equipped to train vocational teachers. These assumptions are called into question by modern adult learning theory.

Although Massachusetts state colleges have historically trained teachers within the context of a pre-service model, that model does not comfortably accommodate the needs of vocational teacher trainees. The large majority of vocational teacher trainees are already employed as teachers, unlike other "undergraduate" teacher trainees. Their situation precludes a pre-service approach to training.

There has been some recognition of adult education principles among the colleges offering vocational teacher training. Some traditional approaches have been modified. Colleges have moved courses off campus, have hired as instructors many practitioners in the field, and have provided courses on a flexible schedule. All these modifications are in line with good adult education practices. However, some of the traditional assumptions of undergraduate higher education which conflict with the situation of the employed adult learner have not been addressed.

It is not impossible or even impractical to resolve these issues within the context of the state college system. For example, two outstanding approaches toward providing the benefits of higher education to adults within the state college system can be found at College III at the University of

Massachusetts in Boston and at the University Without Walls at the University Of Massachusetts in Amherst. These two programs within the state college system have successfully established comprehensive programs that effectively accommodate the situation of adult learners.

Therefore, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION, IN CONJUNCTION WITH THE DIRECTORS OF THE VOCATIONAL TEACHER TRAINING PROGRAMS AT THE STATE COLLEGES, SHOULD EXAMINE THE COLLEGE III PROGRAM AT THE UNIVERSITY OF MASSACHUSETTS-BOSTON AND THE UNIVERSITY WITHOUT WALLS PROGRAM AT THE UNIVERSITY OF MASSACHUSETTS-AMHERST IN ORDER TO EXPLORE WAYS OF ACCOMMODATING UNDERGRADUATE COLLEGE PROGRAMS THAT MEET THE NEEDS OF ADULT LEARNERS WITHIN THE STATE COLLEGE SYSTEM.

Most vocational teacher trainees as adult learners are not in a position to benefit from an education program that is pre-service modeled and that assumes that whatever the trainee needs to know can wait to be applied in the future. Beginning vocational teacher trainees need to know what they need to apply immediately.

Traditional student teacher training programs are entirely future-oriented and assume that students need to learn the accumulated knowledge of the past in order to apply it to the future. The present is viewed as a transition between the two. Within the context of androgogy, the art and science of facilitating adult learning, the present is raised to equal importance with the past and future. Learning becomes problem-centered rather than subject-centered and that learning is directed toward real issues addressed by the learner within his or her current social or professional situations. This particular philosophical approach to learning is useful as a basis for developing new goals for the training of vocational teachers in Massachusetts. The goals for training vocational teachers should consider what Knowles (1978) calls "the foundation stones of modern adult learning theory:"

- Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these needs and interests are appropriate starting points for organizing adult learning activities.

- Adult orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects.

- Experience is the richest resource for adult learning; therefore, the core methodology of adult education is the analysis of experience.

- Adults have a deep need to be self-directing; therefore, the role of the teacher is to engage in a process of mutual inquiry rather than to transmit knowledge to them and then evaluate their conformity to it.

- Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, place, and pace of learning.

These basic concepts must also be considered in conjunction with some other well accepted premises about schooling adults who have been away from school for a long time. Most adults re-entering school after a long period of time may lack confidence in their ability to learn. Such students will learn more effectively when their learning environment allows them to receive immediate feedback on their progress.

Of the teachers responding to the survey in this study, 55% had not attended any school for five years or more, and 43% had not attended any school for ten years or more. On this basis alone, college curriculum planners should reconsider any approach that is dependent on designing courses in traditional formats for vocational teacher trainees. Schooling for vocational teacher trainees must provide for the maximum utilization of strategies that are effective for the adult learner. Based on a review of national and statewide literature and studies on adult learning and teacher education, it is strongly recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD ADOPT A PERFORMANCE-BASED CURRICULUM FOR SATISFYING THE 18-CREDIT TEACHER TRAINING REQUIREMENT FOR FULL APPROVAL AS A VOCATIONAL TEACHER.

It is further recommended that:

> THE CURRICULUM ADOPTED BY THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD BE BASED UPON THE OHIO STATE UNIVERSITY PERFORMANCE-BASED TEACHER EDUCATION MODEL WHICH HAS BEEN FULLY DEVELOPED, VALIDATED, AND IMPLEMENTED IN MANY STATES.

B. The Performance-Based Teacher Education Modular Curriculum

Utilization of a performance-based modular system is widely acknowledged to be an effective adult learning format. The Performance-Based Teacher Education (PBTE) modular curriculum developed by the National Center for Vocational Education at Ohio State University is generally recognized in the literature as an ideal model for the training of vocational teachers. Developed in the mid-1970's, the Ohio State curriculum has been validated numerous times by many states, including an experimental program at Westfield State College in Massachusetts. While each state and experimental program has adapted the model curriculum to its own policy and implementation needs, Ohio State's PBTE modular curriculum remains the ideal-typical model on which to base a state's training of vocational teachers.

In January 1980, two exemplary sites using PBTE, Temple University in Philadelphia, Pennsylvania and the University of Central Florida in Orlando, were studied in depth by Ohio State University.* In addition, data were collected on seventy-one PBTE programs nationwide.

From March 1977 through January 1980, over 260,000 PBTE modules have been distributed. Over 1,350 different agencies and 250 individuals have purchased modules including approximately 990 education agencies and 140 international agencies. The primary purchasers have been colleges and universities. Over 18 percent of all higher education institutions in the United States have purchased PBTE. All fifty states, five U.S. territories, eleven Canadian provinces, and twenty-four other foreign countries have purchased modules. Based on enrollment data from twenty-nine educational agencies, an average of sixty teachers are enrolled per PBTE program on a yearly basis. Since 990 educational agencies have purchased PBTE modules, a rough estimate of 59,000 vocational education teachers have used PBTE modules.

Full-scale implementation as well as creative adaptations of PBTE are occurring at many agencies across the nation. Of the 990 educational agencies which have purchased PBTE modules, 360 are universities, 330 are secondary schools, 210 are postsecondary institutions, and 90 are state agencies. At colleges and universities, PBTE is used for preservice and inservice vocational teacher education programs. PBTE is being used to train teachers in agricultural education, business and office education, and trade and industrial education. At secondary schools, PBTE modules are used for inservice programs for practicing teachers. At postsecondary institutions, there is an increasing use of the PBTE modules for staff development programs, most frequently as part of a comprehensive personnel evaluation and development system. In addition to education agencies, over 220 noneducation agencies such as Caterpillar Tractor Company, IBM, and Union Carbide are using the PBTE modules, most frequently as part of company training programs for improving instructional techniques.

The Performance-Based Teacher Education materials developed by the National Center for Research in Vocational Education at Ohio State University incorporate a tested and validated approach to training vocational teachers within the framework of recognized principals of adult education:

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* Adams, Kay A., et.al., Does Performance Based Teacher Education Work?: Case Studies of a Model Curriculum For Vocational Teacher Education, Ohio State University, Columbus, National Center For Research in Vocational Education, January, 1981.

- Curriculum modules are designed to facilitate individualization of instruction in order to meet specific teacher needs, interests, and learning styles. The modules present learning experiences directly relevant to the needs of vocational teachers;
- Curriculum modules are designed to be field-centered and to enhance realism. They require candidates to demonstrate essential teaching skills in an actual teaching situation;
- Curriculum modules are designed to make it easy for teacher trainees to determine what they are to learn and how their learning will be applied. Trainees are provided with the opportunity to choose among learning activities, with emphasis more upon developing the ability to teach than upon gaining knowledge about teaching.
- Curriculum modules are designed to provide more options to the trainee and to the instructional staff in the selection and sequence of their instructional program. The modular approach also allows adult trainees to move at their own pace and express their own views and concerns.

In Massachusetts, a study has already been conducted comparing the several curricula for training vocational instructors that exist in the national literature. Resnick (Professional Development Study for Massachusetts, 1977) compiled and validated a curriculum for Massachusetts vocational teachers that was based on Ohio State's PBTE modular curriculum. Resnick's curriculum, while fairly comprehensive in representing all areas that are specified in the literature as important to the training of vocational teachers, needs to be assessed in terms of the practical realities of policy and implementation in the state.

The curriculum content of the 18 credits of coursework required of provisionally approved vocational teachers was examined. Based on the results of this and other studies, a model is proposed that systematically examines curriculum content in terms of teaching skills competence.

C. The Proposed Model

Based on a review of national literature on curricula for training vocational teachers, this study proposes a model derived from the Ohio State University Performance-Based Teacher Education modular curriculum. The model has been designed to account for the particular training needs of vocational teachers in Massachusetts as determined by this study. It takes into account the present structure for training teachers, the legislative and regulatory mandates involved, and it addresses the identified needs of provisionally approved vocational teachers for teacher training. (See Figure 1)

1. Curriculum Clusters: The proposed model for Massachusetts is based upon the selection and sequencing of Ohio State University PBTE modules into six curriculum clusters. Seventy of the one hundred original Ohio State modules are grouped into six curriculum clusters considered appropriate for the initial training of provisionally approved vocational teachers in Massachusetts. The remaining thirty of Ohio State's modules not included in the proposed model are more appropriate for fully approved vocational teachers seeking advanced study or professional improvement credit. (See Figure 2)

The six, sequential curriculum clusters proposed are:

1. Introduction to Teaching for the Vocational Educator;
2. Curriculum Planning and Development for the Vocational Educator;
3. Teaching Methods for the Vocational Educator;
4. Instructional Management for the Vocational Educator;
5. Instructional Evaluation for the Vocational Educator; and,
6. Professional Responsibilities for the Vocational Educator.

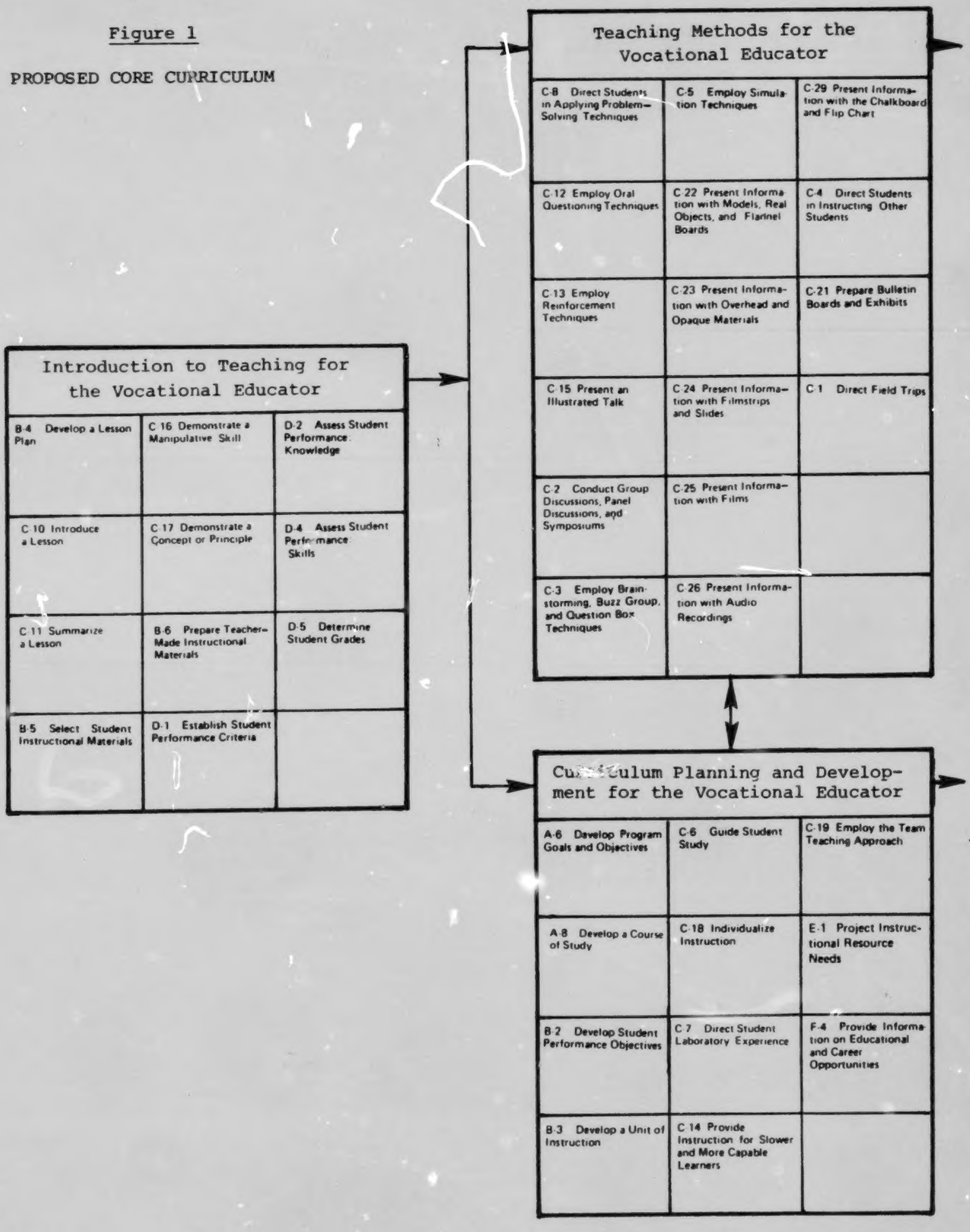
These clusters have been prioritized overall on the basis of an inexperienced teacher's most immediate need to know. Within each cluster, a series of Ohio State's PBTE curriculum modules are sequentially ordered. The competencies developed within each sequence of modules are, again, prioritized by a teacher's need to know, as opposed to a linear topical development. Performance-based modular acquisition of teaching skills is ideally suited to such reconfigurations according to needs, and allows for maximum utilization of current adult learning practices.

As an example, the first cluster proposed, "Introduction to Teaching," contains the following Ohio State modules:

Curriculum Title	Module
Develop a Lesson Plan	(B-4)
Introduce a Lesson	(C-10)

Figure 1

PROPOSED CORE CURRICULUM



Introduction to Teaching for the Vocational Educator

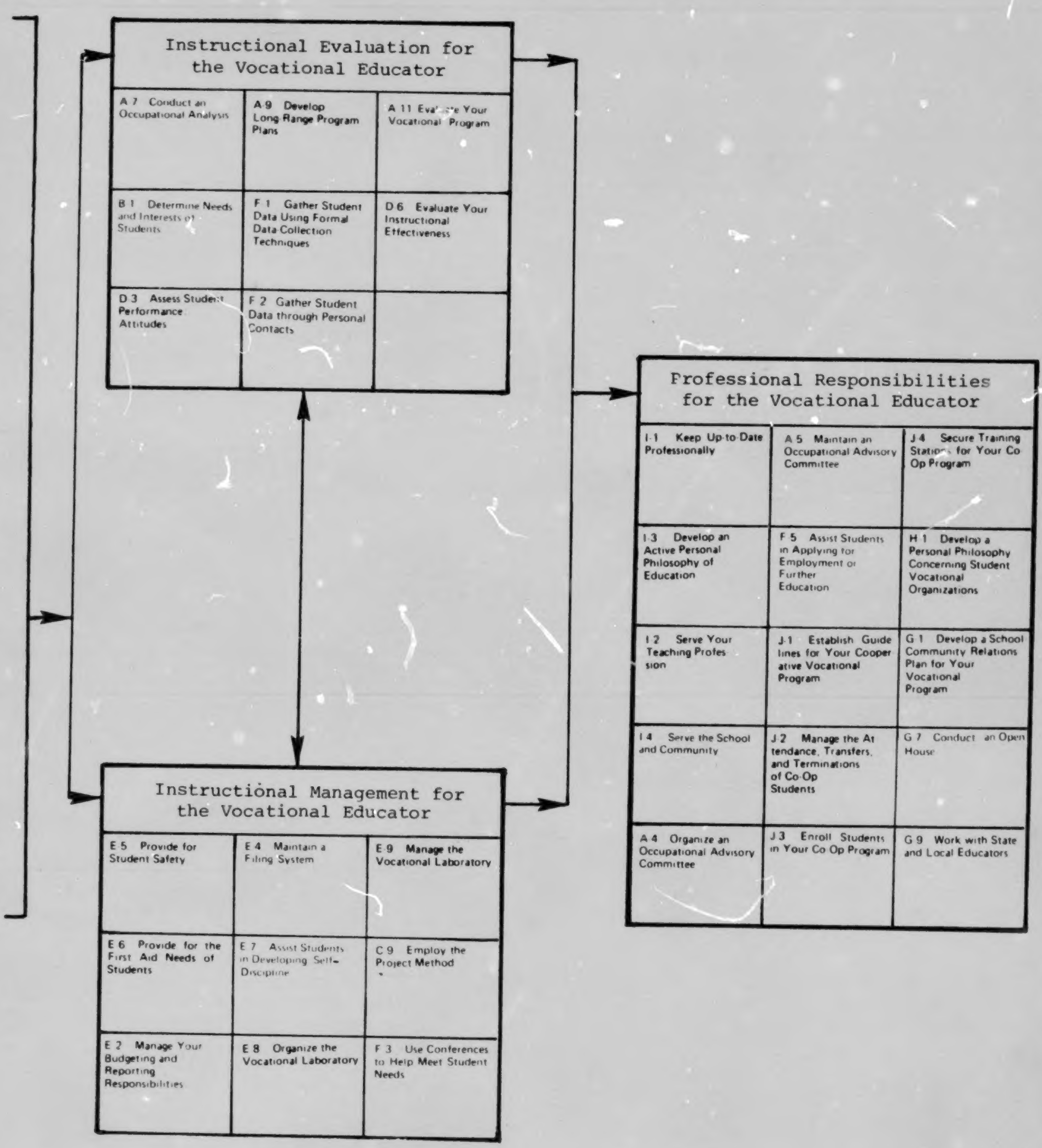
B-4 Develop a Lesson Plan	C-16 Demonstrate a Manipulative Skill	D-2 Assess Student Performance: Knowledge
C-10 Introduce a Lesson	C-17 Demonstrate a Concept or Principle	D-4 Assess Student Performance: Skills
C-11 Summarize a Lesson	B-6 Prepare Teacher-Made Instructional Materials	D-5 Determine Student Grades
B-5 Select Student Instructional Materials	D-1 Establish Student Performance Criteria	

Teaching Methods for the Vocational Educator

C-8 Direct Students in Applying Problem-Solving Techniques	C-5 Employ Simulation Techniques	C-29 Present Information with the Chalkboard and Flip Chart
C-12 Employ Oral Questioning Techniques	C-22 Present Information with Models, Real Objects, and Flannel Boards	C-4 Direct Students in Instructing Other Students
C-13 Employ Reinforcement Techniques	C-23 Present Information with Overhead and Opaque Materials	C-21 Prepare Bulletin Boards and Exhibits
C-15 Present an Illustrated Talk	C-24 Present Information with Filmstrips and Slides	C-1 Direct Field Trips
C-2 Conduct Group Discussions, Panel Discussions, and Symposiums	C-25 Present Information with Films	
C-3 Employ Brainstorming, Buzz Group, and Question Box Techniques	C-26 Present Information with Audio Recordings	

Curriculum Planning and Development for the Vocational Educator

A-6 Develop Program Goals and Objectives	C-6 Guide Student Study	C-19 Employ the Team Teaching Approach
A-8 Develop a Course of Study	C-18 Individualize Instruction	E-1 Project Instructional Resource Needs
B-2 Develop Student Performance Objectives	C-7 Direct Student Laboratory Experience	F-4 Provide Information on Educational and Career Opportunities
B-3 Develop a Unit of Instruction	C-14 Provide Instruction for Slower and More Capable Learners	



Instructional Evaluation for the Vocational Educator

A-7 Conduct an Occupational Analysis	A-9 Develop Long-Range Program Plans	A-11 Evaluate Your Vocational Program
B-1 Determine Needs and Interests of Students	F-1 Gather Student Data Using Formal Data-Collection Techniques	D-6 Evaluate Your Instructional Effectiveness
D-3 Assess Student Performance: Attitudes	F-2 Gather Student Data through Personal Contacts	

Professional Responsibilities for the Vocational Educator

I-1 Keep Up-to-Date Professionally	A-5 Maintain an Occupational Advisory Committee	J-4 Secure Training Stations for Your Co-Op Program
I-3 Develop an Active Personal Philosophy of Education	F-5 Assist Students in Applying for Employment or Further Education	H-1 Develop a Personal Philosophy Concerning Student Vocational Organizations
I-2 Serve Your Teaching Profession	J-1 Establish Guidelines for Your Cooperative Vocational Program	G-1 Develop a School-Community Relations Plan for Your Vocational Program
I-4 Serve the School and Community	J-2 Manage the Attendance, Transfers, and Terminations of Co-Op Students	G-7 Conduct an Open House
A-4 Organize an Occupational Advisory Committee	J-3 Enroll Students in Your Co-Op Program	G-9 Work with State and Local Educators

Instructional Management for the Vocational Educator

E-5 Provide for Student Safety	E-4 Maintain a Filing System	E-9 Manage the Vocational Laboratory
E-6 Provide for the First Aid Needs of Students	E-7 Assist Students in Developing Self-Discipline	C-9 Employ the Project Method
E-2 Manage Your Budgeting and Reporting Responsibilities	E-8 Organize the Vocational Laboratory	F-3 Use Conferences to Help Meet Student Needs

Figure 2

DELETED MODULES: POSSIBILITIES FOR ADVANCED STUDY

A-1 Prepare for a Community Survey
A-2 Conduct a Community Survey
A-3 Report the Findings of a Community Survey
A-10 Conduct a Student Follow-Up Study

C-20 Use Subject Matter Experts to Present Information
C-27 Present Information with Televised and Videotaped Materials
C-28 Employ Programmed Instruction

E-3 Arrange for Improvement of Your Vocational Facilities

G-2 Give Presentations to Promote Your Vocational Program
G-3 Develop Brochures to Promote Your Vocational Program
G-4 Prepare Displays to Promote Your Vocational Program
G-5 Prepare News Releases and Articles Concerning Your Vocational Program
G-6 Arrange for Television and Radio Presentations Concerning Your Vocational Program
G-8 Work with Members of the Community
G-10 Obtain Feedback about Your Vocational Program

H-2 Establish a Student Vocational Organization
H-3 Prepare Student Vocational Organization Members for Leadership Roles
H-4 Assist Students in Developing and Financing a Yearly Program of Activities
H-5 Supervise Activities of the Student Vocational Organization
H-6 Guide Participation in Student Vocational Organization Contests

I-5 Obtain a Suitable Teaching Position
I-6 Provide Laboratory Experiences for Prospective Teachers
I-7 Plan the Student Teaching Experience
I-8 Supervise Student Teachers

J-5 Place Co-Op Students on the Job
J-6 Develop the Training Ability of On-the-Job Instructors
J-7 Coordinate On-the-Job Instruction
J-8 Evaluate Co-Op Students' On-the-Job Performance
J-9 Prepare for Students' Related Instruction
J-10 Supervise an Employer-Employee Appreciation Event

Summarize a Lesson	(C-11)
Select Student Instructional Materials	(B-5)
Prepare Teacher-Made Instructional Materials	(B-6)
Demonstrate a Manipulative Skill	(C-16)
Demonstrate a Concept or Principle	(C-17)
Establish Student Performance Criteria	(D-1)
Assess Student Performance Knowledge	(D-2)
Assess Student Performance Skills	(D-4)
Determine Student Grades	(D-5)

A complete listing of the six proposed clusters and of the Ohio State modules contained in each cluster is presented in Appendix A of this study.

2. Rationale for the Proposed Sequencing: The rationale guiding the sequencing of curriculum modules within the model proposed for Massachusetts is based upon the fact that at the time provisional approval is granted to teach, most vocational teachers do not have any teacher training to prepare them for their first encounter with students in a classroom or shop. Therefore, the most critical teaching skills are presented first in this model. The sequence then moves to those skills which are necessary, but not as immediately essential to the "survival" of both teacher and students as the teacher moves through the process of acquiring the competencies necessary to be a fully approved vocational teacher. Full approval would signify that the vocational teacher has successfully completed the teacher training requirements and is now fully competent to teach students.

Although some provisionally-approved vocational teachers have received pre-service training, for example vocational agriculture, home economics, and some distributive education vocational teachers, at least 70% of the teacher trainees receive no pre-service training. For these, the "critical classroom survival/effectiveness skills" are essential to ease the initial transition from tradesperson to vocational teacher.

Several of the premises underlying the proposed sequencing of curriculum modules were derived through the course of this study. These premises include the following:

- Most provisionally-approved vocational teachers begin their first day of teaching students in a classroom or shop without even a day of teacher training;

- Some teacher training on what to expect in the shop would greatly reduce anxiety on the part of the new teacher, and

- New, provisionally-approved teachers would be much more effective in the classroom during their first year if essential teacher training skills were acquired during their first semester of teaching.

Among the teaching, curricula, and support materials examined in this study were the Vocational Education Curriculum Specialist Project (VECS) materials developed by the American Institutes for Research.

> The 16 Vocational Education Curriculum Specialist (VECS) modules are intended to train vocational educators to become specialists in curriculum design, implementation, and management...skills that are increasingly necessary to adapt vocational programs to the needs of persons living and working in a rapidly changing society. (VECS, Module 1)

The modules are comprehensive and well developed for the training of curriculum specialists in vocational education.

Each module follows the following general format:

- Introduction, including an "overview," "instructions to the learner," "goals and objectives," and "resources;"

- Separate listings of each goal with related objectives and activities;

- A summary of the module; and

- Appendices, including "individual study activity responses," "self-check," "self-check responses," and "recommended references."

The Vocational Education Curriculum Specialist (VECS) system of materials was compared with the proposed model of the Ohio State University performance-based teacher education (PBTE) curriculum in terms of the basic teaching competencies required of a vocational teacher.

- Of the 16 VECS models reviewed, only 9 or 10 are directly related to skills and information initially needed by the vocational shop or classroom teacher and provided by the proposed PBTE model;

- There are several areas of skills and knowledge needed by vocational shop and classroom teachers which are not covered in the VECS modules and are covered in the PBTE modules; and

- The level and comprehensiveness of the VECS modules is generally more appropriate for advanced study beyond the basic teaching competencies.

However, the VECS materials would provide a valuable resource to both teacher trainees and the resource people who work with them as additional material to be used within the proposed model based on the Ohio State PBTE.

3. Modular or Performance-Based Curricula Within a Credit-Mandated System: Chapter 74 regulations in Massachusetts stipulate that for a teacher to become fully approved in vocational education, 18 college credits of teacher training must be successfully completed. However, neither the content which makes up those 18 credits nor the way in which those 18 credits are administered are regulated by law. Therefore, it is possible to implement a system of performance-based learning which is far removed from a traditional credit system type of learning model within the present regulations. If a modular or performance-based curriculum were to be implemented, there are a variety of ways in which credits could be awarded. For instance, credit could be granted as certain groups or clusters of competencies are completed. Another option could be to withhold the awarding of any college credit until all teacher training competencies are completed, at which time the teacher trainee would receive the full 18 credits for approval at once.

A major pitfall to be avoided in the accrediting of these competencies is the tendency to think of the clusters as "courses" in the traditional sense, rather than as a set of sequenced and modular competencies.

4. Major Differences Between the Proposed Curriculum and the Present Curriculum in Massachusetts: The present curriculum in Massachusetts, derived from a set of approved course titles for the 18 credit requirement, does not focus directly on the acquisition of teaching skills and competencies. Instead, the coursework addresses general topic areas within the field of vocational education. This is a very different approach from the proposed adaptation of Ohio State's PBTE curriculum. The modular system suggested incorporates six clusters of competencies which directly relate to the acquisition of needed teaching skills. Massachusetts vocational teacher training must be revised toward the development of practical teaching skills and the application of those skills. Implementation of the proposed model of curriculum modules would meet this need.

Analysis of the present teacher training curriculum was conducted in terms of the recommended model. Course outlines and syllabi were obtained from each of the state colleges for all of the basic vocational teacher training courses. These courses included the following:

- Foundations of Occupational Education;
- Supervision and Administration of Vocational Education;
- Laws Relating to Occupational Education;

- General, Education, or Adolescent Psychology;
- Occupational and Training Information;
- Educational Tests and Measurements;
- History and Philosophy of Occupational Education; and
- Advanced Methods of Teaching in Occupational Education.

Each course outline was reviewed in comparison to the 70 curricula modules recommended for adoption by Massachusetts from Ohio State's 100 Performance-Based Teacher Education modules. The 70 teacher training modules recommended for Massachusetts by this study cover the most essential teacher competencies from the Ohio State model. This type of review or comparison can only determine whether or not a topic is addressed. It cannot determine the extent or the effectiveness of topic coverage.

It was found that the "Advanced Methods of Teaching" course has not been offered since the fall of 1978 and that the "History and Philosophy" course does not address any of the seventy basic competencies included in the recommended model.

Review of the course outlines for the remaining six courses indicates a great deal of inconsistency between the colleges in terms of the material covered by each course. Content presented under the same course title differed from school to school.

By holding the recommended 70 basic curriculum areas steady as a basis of comparison, it was found that all of the courses at any one college covered only one-half to two-thirds of the basic curriculum areas recommended for beginning teachers. When all the curriculum areas for all three colleges are combined, then 62 of the recommended 70 basic curriculum areas are covered, but no single trainee would be likely to take that combination of courses from three different schools. Finally, it should be remembered that these comparisons are based on all courses offered (21 credits) and the trainee is only required to take 18 of those credits.

Although the eight basic teacher training courses offered by the state colleges all carry standard titles approved by the state, information from available course outlines indicates that the specific content of a given course can vary widely from school to school.

The Ohio State PBTE model is organized into 100 curriculum modules. Seventy of those curriculum modules have been recommended to meet the basic training needs of beginning teachers. The thirty curriculum modules remaining are appropriate for more advanced teacher training once full approval status has been achieved. It was found that almost half of these more advanced topics are covered within the coursework presently offered to fulfill the 18 credit teacher requirement.

Finally, analysis of course outlines for coursework at all of the colleges indicates that a great deal of repetition exists. The same topics are presented a number of times as trainees progress through the required 18 credits of coursework at any one college.

D. DIRECTION FOR VOCATIONAL TEACHER TRAINING IN MASSACHUSETTS

The vocational teacher approval process, and particularly the teacher training component of that process, has undergone significant changes during the last ten years. The institutional members of the approval process, that is local schools with Chapter 74 programs, state colleges which offer vocational teacher training coursework, and the Division of Occupational Education which oversees vocational education for the state, have also undergone significant changes for a variety of social, economic, legislative, and judicial reasons.

As a result of these changes, local schools have an increased need for more broadly trained classroom teachers, state colleges are called upon to prepare teachers to meet altering responsibilities in the classroom, and the Division of Occupational Education has the increasingly complex task of recruiting and maintaining an approved pool of adequately trained and appropriate vocational teachers for the local schools to draw upon.

The role of the state colleges in the approval process is to provide training in pedagogical skills for vocational teachers. Although the state may desire that the most up-to-date information and techniques be used to accomplish this training, the state can only set standards of requirement. The colleges, as independent institutions are not legally required to meet those standards; they can choose to withdraw services. Therefore, it is critical that the colleges be made aware of the mutual benefits which would accrue to the implementation of a performance-based modular curriculum model of teacher training as recommended by the study.

A great deal of planning and staff time would be required to implement a performance-based modular system for teacher training. The traditional higher education system of training which utilizes formalized classrooms, rigidly scheduled classes, lecture presentations, and course credit is firmly entrenched in the present teacher training process. Innovation is difficult in any institution until sufficient rationale for change has been accumulated. Difficulties in overcoming this institutional inertia can be anticipated because very few performance-based educational programs exist in Massachusetts. Therefore, performance-based educational programs in line with adult education principals have seldom been seriously considered as viable educational options.

In addition, by seeking this transition, the Division of Occupational Education is put into a position of requiring that the colleges, as independent institutions, implement an innovative educational system. The schools have not planned or prepared themselves for implementing such "experimental" educational methodology on a broad scale.

For the state to require a switch from the traditional credits for courses system, major changes would have to be made in the administration as well as the delivery of vocational teacher training. Disrupting an existing system is always a difficult task and the more venerable the institution, the more likely is resistance to change. Colleges are particularly protective about their relative independence from external regulations. Academic freedom, autonomy, and freedom from state interference may all be called up in defense of a credit system and an administrative structure that may serve the colleges well but may not provide the most effective educational experiences for vocational teacher trainees. The questions are "Can the state, as the consumer, make this requirement of the colleges?" and "Will the colleges, in order to provide more effective, more efficient, and more relevant training for vocational teachers, implement the required internal systemic changes?"

Any significant restructuring of vocational teacher training in Massachusetts will require coordination, communication, and cooperation among the following principals in order to be successful:

- The Massachusetts Division of Occupational Education;
- The Massachusetts state colleges and the University of Massachusetts; and
- The practicing vocational educators of Massachusetts.

The roles of these three vested interest groups in effecting the change to a performance-based modular system of vocational teacher training are viewed as follows:

1. The Division of Occupational Education: The Division of Occupational Education is responsible for implementing the requirements of the general laws, Chapter 74, concerning vocational education. Within this Division, the Office of Professional Development is responsible for the teacher approval process.

The key to change in vocational teacher training lies with the Office of Professional Development, where teacher approvals are determined. The Office of Professional Development would have to assume a strong leadership role in the transition to a performance-based teacher education program.

Therefore, it is recommended that:

THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD ESTABLISH A TASK FORCE FOR A PERIOD OF THREE YEARS TO OVERSEE THE ADAPTATION AND IMPLEMENTATION OF THE OHIO STATE UNIVERSITY PERFORMANCE-BASED TEACHER EDUCATION MODULAR CURRICULUM IN MASSACHUSETTS.

It is further recommended that:

THE TASK FORCE SHOULD CONSIST OF THE FOLLOWING MEMBERS:

- The Associate Commissioner for Occupational Education;
- The Director of the Office of Professional Development;
- A Representative from Fitchburg State College, Westfield State College, and Boston State College;
- A Representative from the Massachusetts Association of Vocational Administrators;
- A Representative from the Massachusetts Vocational Association:
- The Director of the Curriculum Resource Center at Minuteman Regional Vocational School; and
- Experts in Adult Performance-Based Education Currently Employed in the State College System - - Recommended for Consideration are: *Barbara Buchanan* of College III, University of Massachusetts, Boston; *Edward Harris* of the University Without Walls, University of Massachusetts, Amherst; and *Charlotte Rahaim* of the School of Education of the University of Massachusetts, Amherst.

Finally, it is recommended that:

THE TASK FORCE SHOULD HAVE AVAILABLE FOR STUDY THE SUPPORTING MATERIALS FOR THE OHIO STATE UNIVERSITY PERFORMANCE-BASED TEACHER EDUCATION MODEL INCLUDING THE "GUIDE TO THE IMPLEMENTATION OF PERFORMANCE-BASED TEACHER EDUCATION" AND THE "OVERVIEW OF THE CENTER'S PERFORMANCE-BASED TEACHER EDUCATION PROGRAM."

Vocational educators in Massachusetts express a general need for some form of practice teaching as a part of vocational teacher training. There are major drawbacks to consideration of implementing traditional practice teaching requirements. Most trainees are not undergraduate students with a full time commitment to academic pursuits. Nearly all trainees are employed full time and most are employed as practicing, provisionally approved vocational teachers. Issues involving teacher's tenure, status, and salary are both sensitive and complicated.

Therefore, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD CONSIDER THE FIRST YEAR OF TEACHING AS AN INTERNSHIP YEAR. THE DIVISION SHOULD ISSUE A PROVISIONAL CERTIFICATE OF INTERNSHIP UPON COMPLETION OF THE COMPETENCY TESTS AND THEN, UPON SUCCESSFUL COMPLETION OF ONE SCHOOL YEAR (1080 HOURS) OF SUPERVISED TEACHING AS AN INTERN, THE CANDIDATE WOULD BE ELIGIBLE FOR PROVISIONAL OR FULL APPROVAL AS APPROPRIATE.

A major weakness found in the current vocational teacher approval process is the lack of a sufficient number of well qualified applicants from which to choose the most promising teacher candidates. The major source of information for individuals who want to find out how to become a vocational teacher is an informal and uncoordinated teacher recruitment network consisting primarily of vocational educators and tradespeople at the local level. The Division of Occupational Education has played a relatively passive role in teacher recruitment. It has provided information and answered questions for those who voluntarily sought them out. A more active outreach and recruitment role is indicated for the Division of Occupational Education and therefore it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD DEVELOP AND IMPLEMENT A STATEWIDE PUBLIC RELATIONS CAMPAIGN TO RECRUIT VOCATIONAL TEACHERS. THE PUBLIC RELATIONS CAMPAIGN SHOULD INCLUDE THE USE OF PROFESSIONAL QUALITY VIDEO CASSETTES THAT CAN BE DISSEMINATED UPON REQUEST, PROMOTIONAL PAMPHLETS, AND INFORMATION BOOKLETS ON THE APPROVAL PROCESS.

In 1975 a project was begun to enter all vocational approvals into a computerized format. This listing of all approvals granted by the Division has been successfully implemented and maintained. However, there is a need to reformat this information to include updated information on current teaching or administrative status and competencies and on availability as a vocational teacher. In general, there is a need to streamline the Office of Professional Development record keeping system for applications and processing of teacher approvals. In particular, the computerized listing of approved teachers is in need of reformating and of continual updating, including periodic input from all local schools with Chapter 74 programs. Therefore, it is recommended that:

> THE CURRENT COMPUTERIZED PROGRAM FOR LISTING APPROVALS GRANTED BY THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD BE REFORMATED TO PROVIDE AN EVER CURRENT REGISTRATION OF VOCATIONAL TEACHERS INCLUDING THEIR APPROVAL STATUS, THEIR COMPETENCIES, THEIR CURRENT POSITION AND LOCATION, AND THEIR AVAILABILITY.

It is further recommended that:

> A COMPUTER TERMINAL PROVIDING ACCESS TO THAT INFORMATION BE LOCATED IN THE OFFICE OF PROFESSIONAL DEVELOPMENT SO THAT LOCAL SCHOOLS HAVE A CENTRAL ACCESS LOCATION WHERE EMPLOYMENT NEEDS CAN BE IMMEDIATELY MATCHED AGAINST APPROVED AND AVAILABLE PERSONNEL WITHOUT THE NEED TO RESORT TO LOCAL NETWORKS AND WAIVERS.

Finally, it is the present responsibility of the Office of Professional Development to oversee and facilitate the vocational teacher approval process in Massachusetts. Implementation of this study's recommendations would expand the duties of this office to include the following:

- Facilitating the implementation of a performance-based teacher education modular curriculum in Massachusetts;
- Developing and implementing an aggressive vocational teacher recruitment program; and
- Streamlining record-keeping and access to centralized files so that local schools can receive direct assistance in matching job openings with appropriate, approved, and available personnel.

Therefore, it is recommended that:

> THE OFFICE OF PROFESSIONAL DEVELOPMENT WITHIN THE DIVISION OF OCCUPATIONAL EDUCATION BE PROVIDED WITH SUFFICIENT RESOURCES AND AUTHORITY TO MEET THE ADDITIONAL RESPONSIBILITIES, DUTIES, AND TASKS ASSOCIATED WITH IMPLEMENTING THE RECOMMENDATIONS OF THIS STUDY. THIS MAY REQUIRE RESTRUCTURING WITHIN THE DIVISION OF OCCUPATIONAL EDUCATION IN ORDER TO PROVIDE THE STATUS REQUIRED TO EFFECT IMPLEMENTATION.

2. The Colleges: Any college electing to train vocational teachers under the proposed performance-based education system can expect to encounter implementation difficulties. Staff will have to be trained, new record and management information systems will have to be developed and maintained, and new relationships with other institutions and groups of people will have to be forged. However, the proposed system, once it is in place, should provide a more effective, more relevant, and less costly method for delivering vocational teacher training. Among the responsibilities of the college during the implementation period are the following:

- the orientation and training of teacher trainers and resource persons for the new performance-based modular system;
- the development of administrative procedures to track teacher trainees from entrance to exit in the performance-based program;
- the development of a procedure to keep teacher trainers, resource persons, and curriculum materials up to date; and
- the development of various supports for field-based staff.

Proper orientation and training of the training staff along with the provision of appropriate materials and administrative support can make the difference between an exciting innovation in contemporary educational practices and business as usual.

The role of administration will be crucial to this process. Only minor modifications should be necessary to the content of the proposed curriculum. The content of each module is appropriate, up-to-date, and well prepared. The problems will involve administering the process, managing the records and information, and training and supporting the training staff.

The training staff, because they will be functioning as facilitators and resource people rather than as lecturers, will need training about performance-based teacher education systems. In addition, they must be allowed to function effectively within a management system which reflects their roles.

Therefore, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION, IN CONJUNCTION WITH THE PROPOSED TASK FORCE, SHOULD DEFINE QUALIFICATIONS AND JOB DESCRIPTIONS FOR THE VARIOUS FIELD POSITIONS NECESSARY TO IMPLEMENT THE PERFORMANCE-BASED TEACHER EDUCATION MODEL AT THE STATE LEVEL, THE COLLEGE LEVEL, AND AT THE LOCAL VOCATIONAL SCHOOL LEVEL.

It is further recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION, IN CONJUNCTION WITH THE COLLEGES SHOULD DEVELOP AND IMPLEMENT A SYSTEM FOR UPDATING THE PROFESSIONAL SKILLS OF ALL FULL-TIME AND PART-TIME TEACHER TRAINERS AND RESOURCE PEOPLE. THIS UPDATING SHOULD BE TRAINING SPECIFIC, INFORMATION SHARING, AND SHOULD FOLLOW A MODEL SIMILAR TO THE ANNUAL FITCHBURG STATE COLLEGE PROFESSIONAL DEVELOPMENT CONFERENCE.

Finally, it is recommended that:

THE RESOURCE PEOPLE SHOULD BE SELECTED FROM THE FIELD OF VOCATIONAL EDUCATION BASED UPON EXPERTISE IN THE FOLLOWING AREAS:

- TEACHING METHODS;
- CURRICULUM PLANNING AND DEVELOPMENT;
- INSTRUCTIONAL MANAGEMENT; AND
- INSTRUCTIONAL EVALUATION.

The training staff once selected must be effectively supported in the field. The management of records and information is critical to this process because of the individualized nature of modular learning. Everyone progresses at a different rate through different modules and records must be maintained at each step. For similar reasons, the availability of appropriate teaching and support materials are particularly important. Trainees must have access to materials when they require them.

In addition to training, preparing, and supporting their staff, colleges will have to prepare themselves to accept, teach, credentialize and document the training of vocational teachers in ways that may differ greatly from traditional academic administrative practices. Different record keeping procedures will be required for vocational teacher trainees from the day they enter the program. Therefore, as a starting point, it is recommended that:

THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD ESTABLISH AN INTRODUCTORY AND ASSESSMENT PROCEDURE AS THE UNIFORM ENTRY POINT TO THE PERFORMANCE-BASED SYSTEM FOR TEACHER TRAINEES.

It is also recommended that:

THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD SUPPORT A MINI-COURSE IN CLASSROOM SURVIVAL SKILLS TO BE OFFERED BY THE COLLEGES DURING THE LAST TWO WEEKS OF AUGUST FOR PROVISIONALLY APPROVED VOCATIONAL TEACHERS BEFORE THEIR FIRST YEAR OF TEACHING.

The Massachusetts Association of Vocational Administrators and the Massachusetts Vocational Association should be encouraged to support such a course in classroom survival skills for the beginning teacher. As part of this two-week course, assessment of additional individual needs could take place beginning with basic classroom skills such as public speaking, writing, and professional bearing.

A number of new performance-based teacher education modules have recently been announced by Ohio State University and will become available in 1982 and 1983. These include a set of modules on "Service to Students with Special/Exceptional Needs" and a set on "Assisting Students in Improving Basic Skills." (See Figure 3) The model proposed by this study incorporates only the currently available modules but integration of these new modules, as they become available, would be easy and should be encouraged. Modules, because of their size and inclusivity, are much easier to augment, modify, update, or discard than are courses or textbooks. Consequently, it is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION, IN CONJUNCTION WITH THE STATE COLLEGES THAT TRAIN VOCATIONAL TEACHERS, SHOULD EXPLORE THE POSSIBILITY OF A JOINT FEDERAL GRANT TO TEST THE NEW OHIO STATE PERFORMANCE-BASED TEACHER EDUCATION CURRICULA FOR "SERVING STUDENTS WITH SPECIAL/EXCEPTIONAL NEEDS" AND "ASSISTING STUDENTS IN IMPROVING BASIC SKILLS."

3. The Vocational Educators: Presently, an extensive but informal network exists among vocational educators in the state. This network includes administrators from the local and regional vocational schools and administrators of vocational teacher training at the colleges. Very often it is the vocational school administrators who are hired by the colleges as trainers in the coursework they provide. Vocational teacher recruitment and job matching often take place within this informal network.

However, the informal nature of this network lends itself to the generation of imprecise or self-serving information and also tends to limit access to "outsiders." Most vocational teachers are recruited by other vocational teachers or administrators and then contact the Office of Professional Development for application forms and approvals and contact the schools for coursework and schedules.

Because the implementation of the proposed performance-based teacher education system requires a high degree of coordination between the colleges providing the training, the Office of Professional Development monitoring the training, and the schools where the trainees are employed, good communication between these elements is essential. In order to establish a more formalized communication network, it is recommended that:

> A FULL-TIME VOCATIONAL EDUCATION CONTACT PERSON AT EACH OF THE PARTICIPATING COLLEGES SHOULD BE MADE RESPONSIBLE FOR FIELD CONTACT WITH ALL PROVISIONALLY APPROVED VOCATIONAL TEACHERS WORKING TOWARD FULL APPROVAL.

Figure 3

POTENTIAL FUTURE ADDITIONS

Serving Students with Special/Exceptional Needs

(projected availability - early 1982)

L-1 Prepare Yourself to Serve Exceptional Students
L-2 Identify and Diagnose Exceptional Students
L-3 Plan Instruction for Exceptional Students
L-4 Provide Appropriate Instructional Materials for Exceptional Students
L-5 Modify the Learning Environment for Exceptional Students
L-6 Promote Peer Acceptance of Exceptional Students
L-7 Select Instructional Techniques for Exceptional Students
L-8 Improve Your Communication Skills
L-9 Improve Students' Communication Skills
L-10 Assess the Progress of Exceptional Students
L-11 Counsel Exceptional Students with Personal-Social Problems
L-12 Assist Exceptional Students in Developing Career Planning Skills
L-13 Assist Exceptional Students in Developing Life-Coping Skills
L-14 Prepare Students for Employability
L-15 Evaluate How Your Vocational Program Serves Exceptional Students
L-16 Promote Your Vocational Program with Exceptional Students

Assisting Students in Improving Their Skills

(projected availability - 1982)

M-1 Assist Students in Achieving Basic Reading Skills
M-2 Assist Students in Developing Their Reading Skills
M-3 Assist Students in Improving Their Writing Skills
M-4 Assist Students in Improving Their Oral Communication Skills
M-5 Assist Students in Improving Their Math Skills
M-6 Assist Students in Improving Their Survival Skills
M-7 Deal with Student Use of Alcohol and Other Drugs

This person would provide contact with the vocational teachers being trained and with the local schools where the trainees were employed.

Each school which employs provisionally approved teachers should designate a "Master Teacher" contact who is assigned as a resource person for provisionally approved teachers in the building. This person would probably be the staff member who presently evaluates the teaching staff. It is recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD GRANT PROFESSIONAL IMPROVEMENT CREDIT TO THE SUPERVISING PROFESSIONAL EMPLOYED BY THE LOCAL SCHOOLS.

In line with the need for an improved and more formalized communication network is the need to effectively share resources. The Curriculum Resource Center at the Minuteman Regional Vocational Technical School would be a logical central location for coordinating performance-based teacher education materials. Therefore, it is recommended that:

> THE CURRICULUM RESOURCE CENTER AT THE MINUTEMAN REGIONAL VOCATIONAL TECHNICAL SCHOOL BE DESIGNATED AND UTILIZED AS A CENTRAL COORDINATING POINT FOR RESOURCE MATERIALS ASSOCIATED WITH ATTAINING AND DEMONSTRATING THE COMPETENCIES DESCRIBED IN THE RECOMMENDED PERFORMANCE-BASED TEACHER EDUCATION CURRICULUM MODULES.

It is further recommended that:

> THE DIVISION OF OCCUPATIONAL EDUCATION SHOULD WORK WITH THE CURRICULUM RESOURCE CENTER TO PROVIDE TRAINING FOR VOCATIONAL SCHOOL LIBRARIANS TOWARD ESTABLISHING A DISSEMINATION NETWORK FOR PERFORMANCE-BASED TEACHER EDUCATION MATERIALS THROUGH THE VOCATIONAL SCHOOL LIBRARIES.

A final area of particular concern to the vocational educators of Massachusetts is the issue of professional improvement requirements. Presently, fully approved vocational teachers must undertake and complete professional improvement activities in order to maintain their approved vocational teacher status. These requirements were found to be ambiguous and subject to the interpretation of the school administrators who decide whether or not a teacher's private activities can be applied toward this requirement.

Presently, such activities may include time spent practicing or improving their trade skills, credit coursework which is usually related to the acquisition of pedagogical skills, or other pre-selected and approved activities. There is a need for more specific guidelines describing what is required and what activities may be applied toward meeting these requirements. Perhaps these requirements could be structured as optional extensions of competencies acquired during the provisional approval stage of professional development. These requirements might also be linked into a staff evaluation process.

It was found that many vocational teachers, in meeting this requirement, choose to undertake professional improvement activities exclusively in trade activities or exclusively in structured coursework or workshop activities. Some sort of balance might be overlaid on the requirements so that, for example, within a five year period at least 20% of professional improvement activities would be in one area or the other.

It is recommended that:

> THE PROFESSIONAL IMPROVEMENT REQUIREMENTS OF APPROVED VOCATIONAL TEACHERS SHOULD BE REVIEWED, SHOULD BE MORE CLEARLY DEFINED, AND SHOULD BE CLOSELY MONITORED BY THE DIVISION OF OCCUPATIONAL EDUCATION.

PART TWO: STUDY METHODOLOGY AND FINDINGS

I. STUDY METHODOLOGY

A. Goal and Objectives

The design of this study incorporated a series of questions associated with the four major study objectives. The study plan, the objectives, and project activities were all directed towards the project goal:

> TO CONDUCT A COMPREHENSIVE STUDY OF CURRENT METHODS OF TRAINING VOCATIONAL INSTRUCTORS WITH A FOCUS UPON PRESENT AND FUTURE IMPLICATIONS FOR THE COMMONWEALTH OF MASSACHUSETTS.

Four study objectives were developed under this goal as follows:

- To develop an overview of the Vocational Teacher Approval Process in Massachusetts;
- To describe the context of the Vocational Teacher Approval Process in Massachusetts;
- To describe and analyze the Teacher Training Component of the Teacher Approval Process in Massachusetts; and
- To analyze the effectiveness of the Teacher Training Component of the Massachusetts Vocational Teacher Approval Process.

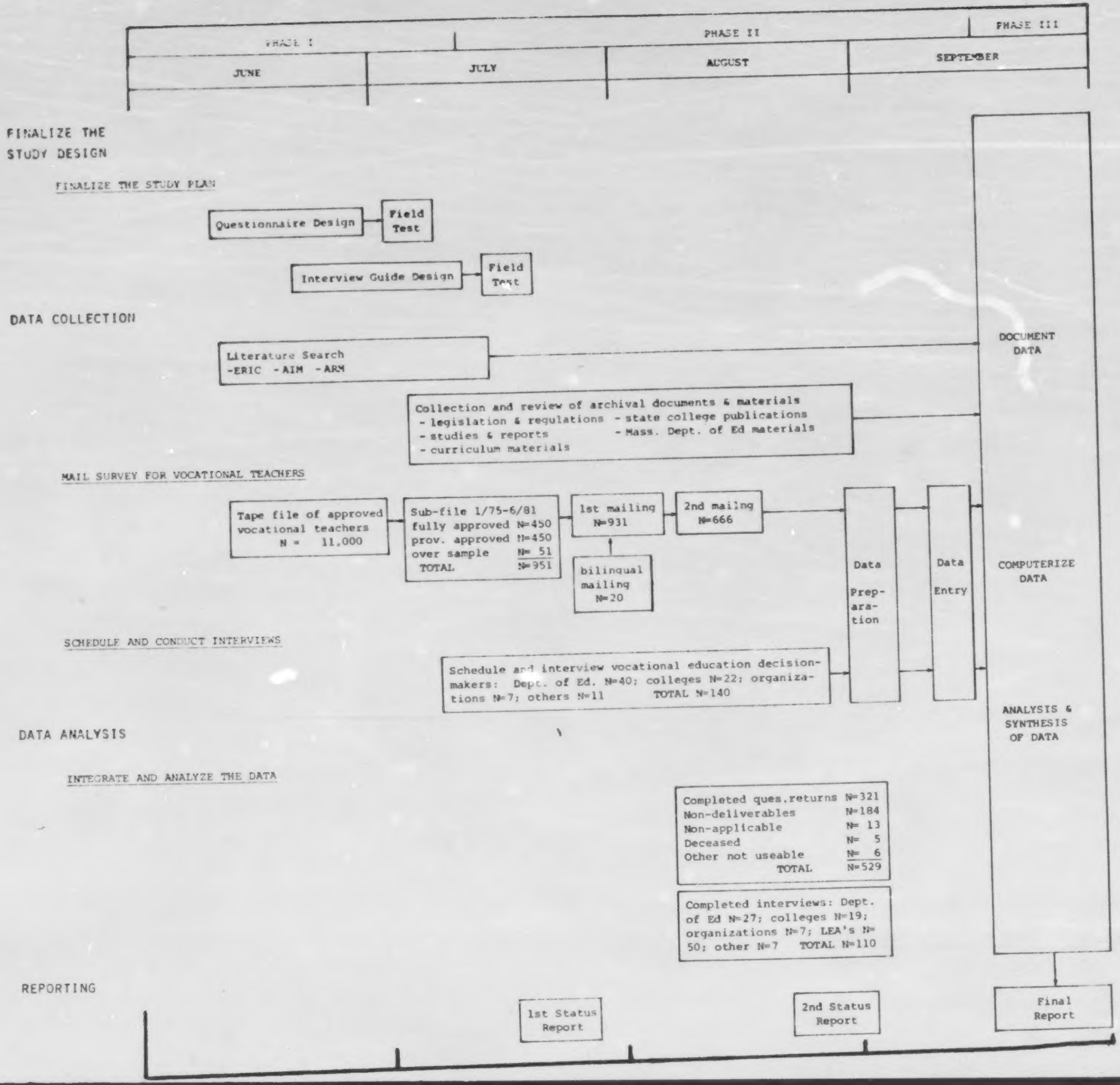
During the first two weeks of the project Logos staff met with Office of Professional Development staff to refine the study designed to achieve their objectives. This design was to incorporate a critical analysis of vocational teacher training within the context of the teacher approval process. During this period of clarification, specific areas of focus and specific questions or information needs of the Office of Professional Development were agreed upon.

During this initial period, most of the data sources were identified and the data collection procedures were selected. Methodological approaches were chosen and matched with specific information needs in order to ensure the inclusive development of data. All components of the study design contributed towards the overall analysis of vocational education teacher training.

The completed study plan was submitted to the Office of Professional Development, data collection instruments were designed and field-tested, and data was collected. The final weeks of the project involved data analysis, integration of findings, and preparation of the report. Figure 4 shows the study and implementation design utilized in the course of the study.

Figure 4

STUDY IMPLEMENTATION DESIGN


PHASE I
PHASE II
PHASE III
JUNE
JULY
AUGUST
SEPTEMBER
FINALIZE THE STUDY DESIGN
FINALIZE THE STUDY PLAN
Questionnaire Design
Field Test
Interview Guide Design
Field Test
DATA COLLECTION
Literature Search -ERIC -AIM -ARM
Collection and review of archival documents & materials
- legislation & regulations
- studies & reports
- curriculum materials
- state college publications
- Mass. Dept. of Ed materials
MAIL SURVEY FOR VOCATIONAL TEACHERS
Tape file of approved vocational teachers N = 11,000
Sub-file 1/75-6/81
fully approved N=450
prov. approved N=450
over sample N= 51
TOTAL N=951
1st mailing N=931
bilingual mailing N=20
2nd mailing N=666
Data Prep-ara-tion
Data Entry
SCHEDULE AND CONDUCT INTERVIEWS
Schedule and interview vocational education decision-makers: Dept. of Ed. N=40; colleges N=22; organizations N=7; others N=11 TOTAL N=140
DOCUMENT DATA
COMPUTERIZE DATA
ANALYSIS & SYNTHESIS OF DATA
DATA ANALYSIS
INTEGRATE AND ANALYZE THE DATA
Completed ques.returns N=321
Non-deliverables N=184
Non-applicable N= 13
Deceased N= 5
Other not useable N= 6
TOTAL N=529
Completed interviews: Dept. of Ed N=27; colleges N=19; organizations N=7; LEA's N=50; other N=7 TOTAL N=110
REPORTING
1st Status Report
2nd Status Report
Final Report

B. Procedures and Approaches

Procedures for data collection were grouped into the following four general research methodologies:

- archival review;
- observational activities;
- formal interviews; and
- surveys.

The specific data collection activities and their relationship to the study are presented in detail here.

1. Archival Review

Archival examination and document review were ongoing study activities and several different types of document review were conducted. The purpose, as well as the extracted content of these reviews were matched to different informational needs at various stages of the study. Document review was instrumental toward:

- establishing a framework for the study of vocational teacher training;
- designing the specific study plan and instruments; and
- defining the context in which the recommendations were developed.

Sources for the ongoing review included archival documents, non-archival documents, and current literature.

Archival documents are historic documents and documents of public record on vocational education. They include, among others, federal and Massachusetts legislation which establishes and defines vocational teacher training, the Massachusetts five-year plan for vocational education, college catalogs, the teacher approval computer tape, Bulletin 326, Chapter 74 Regulations of the Acts of 1977, and memoranda from the Office of Professional Development describing criteria for vocational teacher approval in the various program areas. These archives are, in essence, the official records of vocational teacher training in Massachusetts.

Non-archival documents are the internal written records of the vocational teacher training programs, including internal reports and memoranda, minutes of meetings, and raw data such as registration figures. The distinction is made between archives and other types of documents to emphasize their distinct contents and their varied roles in a study. A great deal of cooperation was received at all levels in obtaining these internal documents despite the potentially sensitive nature of written materials originated for in-house use only.

Current literature in the fields of vocational education, adult education, and training contributed to the development of study objectives and the assessment of issues addressed throughout the project. Many of the observations, findings, and recommendations specific to this report are concurrently major issues of concern in the fields of vocational education, adult education, and training. Table 1 contains a listing of selected documents referred to for this study.

Specific areas of the study where document review was essential include the following:

- the study design;
- the design of data collection instruments; and
- the data analysis and policy recommendations.

A specific review was conducted of documents associated with course content at each of three state colleges that offer coursework for the required 18 credits for full teacher approval. The purpose of this review was to determine course content within each course and across all courses for comparison with the content of the proposed performance-based teacher education model.

2. Observational Activities

Observations, both formal and informal, were conducted during the course of this study.

Informal observations were those observations made while in the process of conducting some other study activity. In the course of the study, visits were made to the six regional education centers, 28 local vocational schools, five colleges, and the Department of Education central office. Additionally, Logos personnel attended the annual Massachusetts Vocational Association meeting in West Springfield and the annual Professional Development Workshop at Fitchburg State College. While obtaining the information needed and completing the visits' objectives, new or unanticipated information emerged continuously and was recorded for assessment. Information received from these informal observations, as well as from the formal observations, was maintained for in-house review throughout the evaluation.

Formal observations were made at various levels of project activities. Specifically, formal observations included visits to the three state colleges to obtain enrollment and course descriptive information and attendance at specific presentations during the Massachusetts Vocational Association and Fitchburg conferences.

3. Formal Interviews

In addition to the informal interviews conducted at various stages of the study, a series of formal interviews were also scheduled. These formal

Table 1

MAJOR DOCUMENTS AND ARCHIVES
REVIEWED FOR THIS STUDY

LEGISLATION AND REGULATIONS

Massachusetts. Bulletin 326, Information Relating to the Establishment and Administration of State-Aided Vocational Schools. State Board for Vocational Education, March 1951.

Massachusetts. Chapter 74 Regulations Governing Vocational Education. Massachusetts Board of Education, June 28, 1977.

U.S. Congress. Education Amendments of 1976, Title II, Public Law 94-428. 94th U.S. Congress, Washington, D.C., 1976.

U.S. Congress. Vocational Education Act of 1963, Public Law 88-210. 88th U.S. Congress, Washington, D.C., 1963.

U.S. Congress. Vocational Education Amendments Act, Public Law 90-576. 90th U.S. Congress, Washington, D.C., 1968.

CURRICULUM MATERIALS

American Institutes for Research and Washington State University. Vocational Education Curriculum Specialist (VECS), Modules 1-16. Washington, D.C., 1981.

Fardig, Glen E.; Norton, Robert E.; and Hamilton, James B. Guide to The Implementation of Performance-Based Teacher Education. AAVIM: Atlanta, Georgia, 1977.

Hamilton, James B. and Quinn, Karen M. Resource Person Guide to Using Performance-Based Teacher Education Materials. The Center for Vocational Education, The Ohio State University, Columbus, 1978.

Norton, Robert E. and Huang, May W. Student Guide to Using Performance-Based Teacher Education Materials. The Center for Vocational Education, The Ohio State University, Columbus, 1977.

Norton, Robert E.; Harrington, Lois G.; and Gill, Janet. Performance-Based Teacher Education: The State of the Art. The Center for Vocational Education, The Ohio State University, Columbus, 1978.

Table 1 (continued)

STUDIES, REPORTS, AND OTHER PUBLICATIONS

Adams, Kay A; MacKay, Brenda J.; and Patton, Michael O. Does Performance-Based Teacher Education Work? The National Center for Research in Vocationa Education, The Ohio State University, Columbus, Ohio, January 1981.

Dwyer, William A. National Industrial Education Teacher Survey. Bureau of Vocational Education, Massachusetts Department of Education, Boston 1968.

Hurwitz, Alan. Bilingual Vocational Instructor Training. Information Series No. 201. The National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio, 1980.

Halfin, Harold et al. Professional Education Competencies Needed by UTAE Teachers. Final Report. Center for Vocational, Technical, and Adult Education, Wisconsin University, Stout, June 30, 1977.

Jones, Ronald E. An Assessment of Vocational Education Research Needs in Massachusetts. Unpublished Ed. D. Dissertation. University of Massachusetts, Amherst, 1979.

Leighbody, G.B. Vocational Education in America's Schools. American Technical Society, Chicago, 1972.

Massachusetts Advisory Council on Vocational-Technical Education. Eleventh Annual Report on Vocational Education in Massachusetts. Boston, December 1980.

Resnick, Harold S. and Carmody, Shirley H. Analysis and Synthesis of Competencies Needed by Vocational and Career Educators: Phase I of a Professional Development Study for Massachusetts. School of Education, Boston University, Boston, January 1977.

Resnick, Harold S. and Carmody, Shirley H. Validation of the Competencies Needed By Vocational Education Teachers, Middle Managers, and Administrators. Part II, Professional Development Study for Massachusetts. School of Education, Boston University, Boston, September 1977.

U.S. Department of Health, Education, and Welfare. The Bridge Between Man and His Work. Washington, D.C.: Government Printing Office, 1968.

Voc Ed, J. American Vocational Association, Arlington, VA, Vol. 55, No. 6, Annual Teacher Issue, June 1980.

Voc Ed, J. American Vocational Association, Arlington, VA, Vol. 56, No. 6, Annual Teacher Issue, June 1981.

Worthington, Robert M. A Study to Evaluate Ten E.P.D.A. Projects in the State of Massachusetts Funded Under Part F (P.L. 90-35) for Fiscal Years 1972, 1973, 1974. Career Development Associates, Inc., Princeton, NJ, December 1975.

interviews (see Appendix B) were structured to elicit general information from all respondents and specific information unique to the category or area of expertise of each respondent. Many of the respondents had expertise in several areas. Formal interviews were scheduled and conducted with the following groups of individuals:

- staff of the Department of Education (central office and regional centers);
- staff at the colleges and universities;
- local school administrators (regional vocational schools and comprehensive high schools with Chapter 74 programs);
- coordinators or officers of student and professional organizations; and
- significant others.

Each individual was classified in a primary interview category although they might also fit into other categories, e.g., the state VICA coordinator, listed under student organizations, is also a member of the Department of Education.

Of the 110 interviews completed, 89 were codeable for analysis. The other 21 interviews involved individuals with specific in-depth information who were not asked many or all questions on the interview guide. In many cases, these uncoded interviews were important for providing background or context for the interviews in general.

a. Interviews with Department of Education Staff: Twenty-seven members of the Department of Education were formally interviewed during July and August. Forty interviews were originally planned but time constraints and summer schedules interfered with contacting more people. A representative sample was obtained, with 10 of those interviewed from the central office and 17 from the six regional centers.

Within the regional centers and the central office, individuals associated with special education, vocational education, and equity issues were interviewed. At least two individuals at each regional center were interviewed.

b. Interviews with College Staff: Nineteen staff members at six colleges and universities offering coursework in vocational education or special education for vocational instructors were interviewed during July and August. Twenty-two interviews were originally planned. These staff members were interviewed on topics dealing with:

- status of vocational teacher trainers;
- course and program offerings in vocational education;
- administrative and organizational structure for vocational education programs;

- information services and counseling for vocational instructors;
- content of course offerings;
- the future of vocational education course offerings.

Included among the respondents at the colleges were project directors for the bilingual and the minority special recruitment projects.

c. Interviews with Local School Administrators: Fifty administrators of local schools with Chapter 74 programs were interviewed during July and August. Of the 30 schools in the sample, at least one administrator was interviewed at 28 of the schools. Of the 50 administrators interviewed (60 were sought), 27 were superintendent-directors and 23 were second level administrators who had as one of their responsibilities teacher evaluation. The sampling procedure for selecting the schools was based on the following criteria:

- Programs: every vocational program, including special programs such as bilingual, is represented in the sample selected.
- Geographical Distribution: each of the six educational regions are represented in the sample selected.
- Size of School: small schools (less than 700 students), medium schools (701-1400 students), and large schools (more than 1400 students) are fairly evenly represented.
- Type of School: comprehensive and regional vocational technical schools are represented in this sample at a ratio of 1 to 2. Also included are agricultural schools and the Hubert Humphrey Occupational Resource Center.
- Suggestions from D.O.E.: where possible, schools suggested for special characteristics by the department were included in the sample.

d. Interviews Associated with Student and Professional Organizations: Seven interviews were conducted with coordinators or officers of the following organizations:

- Vocational Industrial Club of America (VICA);
- Future Farmers of America (FFA);
- Distributive Education Clubs of America (DECA);
- Massachusetts Vocational Association (MVA);
- Massachusetts Association of Vocational Administrators (MAVA);

- Massachusetts Vocational Guidance Association (MVGA); and
- Massachusetts Vocational Agricultural Teachers Association (MVATA).

e. Interviews with Significant Others: Seven interviews were conducted with other individuals who held or had held a position in vocational education in Massachusetts and were felt to have information of significance to this study. This group of individuals included:

- special project directors;
- officers of the Massachusetts Advisory Council on Vocational Education; and
- state level task force committee members.

4. The Survey of Massachusetts Approved Vocational Teachers

The original plan was to conduct this survey by distributing and collecting questionnaires from approved teachers at the vocational schools where they currently taught. Because the project starting date was shifted from April to June, this was not feasible. As an alternative method, the survey was conducted by mail.

The advantages of the mail survey include sampling from all those with state approvals whether or not they are currently teaching, a more detailed description of the survey sample, the ability to describe the non-responses to the survey, and, coincidentally, to verify the accuracy of the computer tape file from which the sample was selected. The disadvantages of the mail survey include a low response rate, higher cost, and dependency on the accuracy of the source list from which the sample was generated.

a. The Sample Design: The Division of Occupational Education maintains a computer tape file of all those who have obtained Massachusetts vocational approvals. The file includes names, addresses, a list of all approvals for an individual, and the date of the most recent approval. The sample was drawn primarily from this file.

From the division's total file, a subfile was created including only those with a teacher approval date from January 1975 to June 1981. Those with administrative codes were excluded.

The subfile was stratified into those with provisional approval status because it was anticipated that approval status would be a significant analysis variable. Four hundred and fifty (450) teachers were randomly selected from all those in the subfile with full approval and 450 teachers were randomly selected from all those in the subfile with provisional approval. This resulted in a sample size of 900, an adequate number to insure enough responses for analysis.

Several groups were oversampled resulting in 51 additions to the sample size. Because of their small numbers, and to insure adequate representation in the sample for analysis, all those with special needs approval and approval in distributive education were added if not already selected. In addition, those with provisional approval from the "Vocational Instructors Training for Minorities" program (Boston State College) and those from the "Bilingual Vocational Teacher Training Program" (Fitchburg State College) who are currently teaching were added. We were unable to obtain a list of participants in the bilingual and minority programs at Westfield State College.

b. The Survey Instrument: The questionnaire was designed to be self-administered and asks for information on the respondent's present teaching status, experience with the required teacher training courses, and some personal descriptive data. The questionnaire was pilot-tested on four practicing vocational teachers in the areas of agriculture, computer programming, electricity, and health. Following the pilot-test, the questionnaire was revised, type-set, and printed. (See Appendix C)

c. Mailing Procedures: Address labels were generated by the computer from the sample file and augmented for those names that were added to the base sample. Each person in the total sample (N=951) received:

- an introductory letter from Associate Commissioner David Cronin;
- an introductory and instruction letter from Logos' project director;
- a questionnaire; and
- a business reply envelope.

A significant cost savings was realized by employing bulk mailing procedures, although this would mean a delay of a week or more for the letters to be delivered or for Logos to receive back the undeliverables. The envelopes were also stamped with "Address Correction Requested" in order to be able to account for as many non-responses as possible, and to have current addresses for the second mailing.

The first mailing consisted of 931 questionnaires mailed on July 28, 1981 and 20 more sent out on August 4, 1981 (the additions from the Fitchburg bilingual program).

A daily log of questionnaire returns was maintained. Each person in the sample was assigned a unique identification number which was printed on their address label and stamped on their questionnaire, so that the second mailing to non-respondents would go out correctly.

The second mailing went out on August 5, 1981, approximately 2 1/2 weeks after the first mailing. The second mailing contained a second questionnaire, a business reply envelope, and a "reminder notice." A total of 666 questionnaires was sent in the second mailing, including those for whom we had received changes of address.

d. Response Pattern: The response pattern was as follows:

completed returns -- 321
non-deliverables -- 184
not applicable -- 13
deceased -- 5
other not useable -- 6
Total -- 529

The "not applicable" returns refer to questionnaires returned to Logos with notes or letters explaining why the person felt it was inappropriate to answer the questionnaire. In addition to the response pattern above, Logos received 55 change of address correction forms.

529 of the original sample (55.6%) have been accounted for. Thirty-three point eight percent of the total sample have returned completed questionnaires. The high percentage of non-deliverables is directly related to the currency of the information on the division's tape file. Approximately 41.9% of those teachers, who it is assumed received the questionnaire (767), responded.

Analysis of the questionnaire returns indicates that it has been well received and thoughtfully filled out. Although the questionnaire is lengthy, most respondents completed all entries. Open-ended questions especially were answered with care and in depth.

e. Respondent Demographics: Representative samples were drawn from the population of vocational educators in Massachusetts. This section describes the demographic and background characteristics of the sample of individuals with vocational teacher approvals who responded to the mail questionnaire, and of the sample of vocational educators who were interviewed in person to provide data for this study.

(1) Vocational Teachers: Of the 321 teachers responding to the mail survey, 46.9% said they would not be teaching in the fall of 1981 and another 7.5% did not know whether or not they would be teaching. Of those not teaching (N=152) 45.4% were working in trade, 15.8% claimed that their position was cut, and another 15.1% said they were never asked to teach. About 3 in 5 of the survey respondents were fully approved teachers, with the balance being provisionally approved. Approximately 2/3 of the teachers had been teaching five years or less. Approximately 3/4 of the teachers had more than ten years trade time, with 1/3 having more than 20 years. About nine out of ten teachers were over age 30 and 60% were over 40 years of age.

Male respondents outnumbered females 3:1 and 90% of the teachers were white, non-hispanic. The non-white respondents were equally distributed among black, non-hispanic; hispanic; and Cape Verdean-Portuguese. Less than 1% were from other ethnic groups.

One teacher in five was fluent in a language other than English. Of these:

- 25.9% were fluent in French;
- 20.7% were fluent in Portuguese;
- 19.0% were fluent in Spanish;
- 15.5% were fluent in Italian.

Table 2

TEACHER SURVEY PROFILE

Teaching Status:	Fully Approved	(62.7%)
Teaching Area:	Trade and Industry	(77.8%)
Employment as Teacher:	Expect to Teach in Fall	(45.6%)
Years Teaching Grades 9-12:	3 - 5 Years	(28.4%)
Where Diploma was Obtained:	Public Comprehensive High School	(53.3%)
Years of formal education:	13 - 15 years (Some college)	(34.5%)
Teacher Approval Credits Completed:	13 - 18	(51.5%)
Years since last schooling before Teacher Training:	More than 5 years	(52.9%)
Years in Trade	More than 10 years	(74.8%)
Age	Over 40	(54.6%)
Sex	Male	(75.3%)
Ethnic Background	White	(90.0%)
Physically Handicapped	No	(96.2%)

Over half of the respondents graduated from a comprehensive high school and one in four graduated from a public vocational/trade school. Ten percent had a G.E.D. or other high school equivalency.

Over 70% of the teachers had entered or completed some college work up to and including post master's work, but more than 1/2 of the teachers have been out of school more than five years.

Prior to teaching, 83.0% of the respondents had been working in the same trade area as they were currently teaching.

Two major reasons were given for the decision to enter teaching:

- A desire to teach -- 58.7%
- Professional growth -- 21.3%

Only one in twenty teachers felt that his/her decision to become a vocational teacher was not a good decision.

Approximately 15% of the teachers said they had trouble adjusting from being a tradesperson to becoming a teacher. Eighty percent (80%) of the respondents felt that teaching was more demanding than they thought it would be. When asked if they would be a vocational teacher five years hence, 22.7% felt that they would not be.

Only 13.8% of the teachers felt that they had better job security as a teacher than as a tradesperson. Similarly, only 20.7% of the teachers said they were no worse off financially as a teacher than if they had remained in trade.

About 4% of the teachers said they were handicapped and only one respondent indicated difficulty with access to the required courses for the necessary 18 credits.

Fully one-half of the teachers were willing to be interviewed over the telephone if necessary and gave a name and telephone number.

(2) Interview Respondents: Of 142 interviews desired for this study, a total of 110 interviews was successfully completed. The major affiliations of those interviewed fall into the following categories:[1]

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[1] An individual is classified according to the primary category for which he/she was selected to be interviewed. For example, the state VICA coordinator is listed under student organizations although this person is also an employee of the State Department of Education.

Table 3

INTERVIEW RESPONDENTS

Primary Affiliation	# Interviewed
Department of Education - Central Office	10
Department of Education - Regional Centers	17
Colleges	19
Local Vocational School Administrators	50
Student and Professional Organizations	7
Other Significant	7
TOTAL	110

Nearly all interview respondents held positions at the first or second level of administrative authority and responsibility in their respective institutions or organizations. Approximately one out of four of those interviewed held a second title that fell into one of the other classifications of affiliation and position of interest in this study.

The 28 local vocational schools with Chapter 74 programs at which administrators were interviewed were fairly evenly divided according to size -- small (less than 700 students), medium (701-1400 students), and large (greater than 1400 students). Approximately 1/4 of the schools were comprehensive high schools, 2/3 were regional vocational schools and 3 were special classifications.

Of the 110 interviews completed, 89 were codable for computer analysis.

12 of the 89 people interviewed were directly associated with programs involving equity and access issues such as affirmative action programs, bilingual education programs, or special education programs.

II: STUDY FINDINGS

The study findings are presented in four sections. Part A provides information about the background and historical content surrounding the provision of vocational education services in Massachusetts. Legislation and regulations were examined as well as policy decisions and structural changes which shaped the present service delivery system. Data included current historical literature, previous studies, public laws, Department of Education documents, and interview data.

Part B focuses on the delivery of vocational teacher training at the three state colleges in Massachusetts which are primarily responsible for the administration of vocational teacher education training coursework for the state. The findings in this section are drawn primarily from an analysis of various college documents and informational brochures, from interviews with college staff responsible for vocational education coursework, and from site visits to each of the three state colleges.

Part C presents the major findings of this study on vocational teacher training in terms of the extent to which select adult education practices are used, the present curriculum for approved vocational education coursework, and study respondents' assessments and recommendations for how the teacher training might be improved.

Part D presents findings from the surveys on the four components of vocational teacher approval. Individuals with vocational teacher approval and other vocational educators across the state were asked about their experiences with and assessments of each of the individual steps in the approval process and of the process as a whole. This last section also addresses findings and issues which relate more generally to the success of both vocational teacher training and to the profession of vocational education in the state.

A. Historical Background

The original goal of publicly supported vocational education as specified by both federal and state law in the late 1800's was to train youth to occupations in agriculture and in industry. The major stated purpose of vocational education was to provide training based on meeting the needs of local labor markets or of particular areas of the economy. This viewpoint was expressed in the legislation which initiated vocational education such as the Federal Morrill Acts of 1862 and 1890 and Chapter 74 of the Massachusetts Acts of 1872.

Legislation concerning the training of vocational teachers followed the establishment of vocational schools. Chapter 74 of the Massachusetts Acts of 1914 established classes for the training of vocational teachers and set a precedent for the Federal Smith-Hughes Act of 1917, the landmark legislation in vocational education. This act called for federal matching of funds for vocational teachers who were to provide entry level training to meet local labor needs.

By the late 1940's and early 1950's, both federal and state laws began to address the individual training needs of students so that they might secure employment. The George-Barden Act of 1946 provided for the funding of training and work experience programs for out-of-school youth. Chapter 74 of the Massachusetts Acts of 1952 provided for practical arts classrooms for the rehabilitation of the disabled. This same act allowed the cities and towns to set up vocational teacher training programs. This law expanded the training opportunities available to vocational teachers and highlighted the need for training tailored to an area's local requirements.

The Federal Vocational Education Act of 1963 extended provisions for serving the needs of an expanded population of vocational students including individuals with academic, socio-economic or other handicaps. Since then, similar legislation mandating equity and access within all publicly supported education has been enacted. Chapter 766 of the Massachusetts Acts of 1972 and P.L. 94-142, the Federal Education For All Handicapped Act are examples of such legislation which reinforce vocational education's progression toward dealing with the individual student's needs for training toward employability.

There has been a history of deliberate movement in vocational education from training oriented to local labor market demands to education focused on the student's needs for preparation to enter the labor market. The general movement has been toward a broader education for a more diverse segment of the population.

As public vocational education has undergone this evolution of purpose and scope, the training provided for its teachers has also required change. Currently, there is a need for broader and more flexible vocational teacher training than was necessary in the past.

Significant changes in the system for training vocational teachers in Massachusetts have occurred over the last 15 years. In 1965, Massachusetts Chapter 74 legislation allowed for state funding of inservice and college programs delivering vocational education teacher training. In 1968, the federal government amended the Vocational Education Act of 1963 to further extend federal funding possibilities for the preparation and upgrading of vocational teachers. Through the 1970's a series of Massachusetts state and federal mandates increased the scope of vocational education teacher training. These mandates included greater access and equity for students within all public schools, and recognized the need for expanded training to prepare teachers to deal with an increasingly diversified body of students. Within vocational education, in order to provide educational services to increased numbers of new and often non-traditional students, changes were required in the way vocational programs were staffed and administered and in the way vocational teachers were trained. Although these changes may have been precipitated by an increase in the number of non-traditional students, the need for changes in the teacher training system already existed.

The most recent definition of vocational education teacher training and qualifications for approval in Massachusetts are found in the state's Chapter 74 regulations governing vocational education adopted by the Board of Education in 1977. These regulations establish the minimum standards for approval as a vocational education teacher, but specify that additional standards may be established by local school committees or boards of trustees. The standards set by the state for vocational teachers fall under the following general areas:

- documentation of years in trade and education;
- trade competency testing and licensing;
- approved college credits; and
- professional improvement activities after full approval.

1. Documentation of Years in Trade and Education: Tradespersons who wish to become a vocational education teacher must document that they have received a high school diploma or the state equivalency certificate. In addition, they must have spent a minimum, regulated amount of time practicing in their trade. In 1971, this trade time requirement was reduced from eight years to six years. The specific requirement depends on the occupational area:

> Trade and industry: requires six years of recent full-time work experience. If a candidate has a bachelor's degree in the specific field for which approval is sought, this may be substituted for up to three years in trade. A master's degree in the specific field may also be substituted for one additional year of experience in trade.
>
> All other areas: require a bachelor's degree and three years of experience in trade. However, credits specific to each field are required and vary according to the approval area. A master's degree can be substituted for one additional year of experience in trade.

2. Trade Competency Testing and Licensing: If a license is necessary to practice in a certain trade, vocational education teachers in that trade must have the necessary license. Trade and industrial candidates seeking provisional approval to teach must pass the statewide written and practical examinations in their trade. Trade tests have generally preceded provisional approval to teach in shops and classrooms.

Initially, trade testing consisted of a three hour written examination and a three hour practical examination, usually given on the same day. This was followed by a three hour personal evaluation by the Board of Examiners. Until 1977, competency testing preceded initial teacher-training coursework.

However, due to criticism concerning the format of the testing, no statewide competency testing took place between Spring 1977 and March 1979. Much of the testing included questions in the form of essays which can be challenged as subjective in nature and which can, therefore, give rise to problems concerning reliability, validity, and standardization of the testing. The written competency testing is presently conducted on the basis of multiple-choice responses.

In the fall of 1979, Fitchburg State College was funded to update the tests which were offered again in the spring of 1980. Because of the backlog of people who were waiting to take the competency tests, candidates were allowed to enroll in coursework before they completed their testing requirements. Provisional approval was usually granted only after testing was completed, but because schools needed to hire shop teachers, waivers were granted for teachers to accommodate the lack of testing. Currently the only waiver granted in the approval process for trade and industry teachers is for the testing.

3. Approved College Credits: The Division of Occupational Education determines the approved content for the mandated 18 semester hours of college credit. The state regulations do not specify that the credits must be in teaching preparation per se, although that is the generally accepted assumption. Presently there are a set of eight approved course titles and outlines which meet the Office of Professional Development's vocational coursework requirement for full teacher approval.

In 1951, a candidate had to complete 240 clock-hours of classroom training. Of these, Teacher-Training I (120 hours) had to be completed before initial teaching and Teacher-Training II (120 hours) had to be completed within the first year of teaching. This classroom training, referred to as TT-1 and TT-2, was provided by the Massachusetts Bureau of Vocational Education and state department employees and local vocational educators taught the courses. Teachers could obtain college credit for this work as follows:

TT-1 (120 clock hours) = 6 college credits

TT-2 (120 clock hours) = 6 college credits

Teaching Experience -
(20 clock hours) = 2 college credits

Approval Requirements =14 college credits

In 1971 the provision of vocational teacher training was transferred to the state colleges. The Department of Education subsidized the required vocational coursework now provided through the colleges. Since that time, the required college coursework has changed several times in terms of course options, the sequencing of courses, and the structure of the training. The completion of two three-credit courses equivalent to TT-1 was required before provisional approval to teach for one year was granted. Coursework equivalent to TT-2 was then required before full approval could be granted.

In 1971, the restructured TT-1 and TT-2 courses were further modified into a 6-credit course entitled "Foundations of Occupational Education." A candidate was required to complete this "Foundations" course before he/she received provisional approval to teach. A candidate then had to complete an additional 12 credits of coursework before full approval was granted. Nine of those credits were required courses and three of those courses could be elected from among several approved courses.

In 1975, candidates were required to complete the "Foundations of Occupational Education" course (6 credits) within one year of passing the competency exams in order to obtain provisional approval. This approval was for two years during which candidates had to complete four out of five of the 3-hour courses which were offered.

In 1976-77, the Department of Education stopped funding teacher training courses at the colleges. The requirement that competency tests be taken before beginning the Foundations course was also eliminated. Provisional approval was still granted, but only after the competency tests had been passed.

Presently, provisional approval is granted after trade time has been documented and the trade competency tests have been passed. A total of 18 approved credits is required to progress from provisional to full approval and the candidate has three years to complete this coursework. Every candidate must take the 6-credit "Foundations of Occupational Education" course and four out of five 3-credit courses offered. An exception is that candidates with a bachelor's degree may elect to take two alternative 3-credit courses instead of the Foundations course. However, most vocational school administrators have required that their teachers take the Foundations course rather than the alternative courses.

4. Professional Improvement Activities: Vocational education teachers with full approval are required to engage in professional improvement activities in order to maintain their approval. The department's revised Bulletin 326, issued in 1951, made professional improvement activities mandatory. This requirement could be met through additional trade contact, additional trade training at the department-sponsored summer conference, or additional training in research for methods of teaching or for improved skill or knowledge in trade.

Traditionally, from 1925 to 1970, the Division of Occupational Education in Massachusetts conducted a professional improvement week. Workshops conducted during this summer conference were applicable toward satisfying professional improvement requirements. Sponsorship of this summer conference by the department ended in 1970.

Subsequently, the Massachusetts Association of Vocational Administrators (MAVA) formed a professional development committee to study the need to continue presenting workshops for teachers. The association conducted workshops in 1972 and 1973 and 90% of the participants indicated they would recommend the workshops to any colleagues who did not attend. These workshops, held at Fitchburg State College, evolved into the annual professional development

"Fitchburg Conference." Participants at the conference have a choice of obtaining 30 hours of professional improvement credit or two college credits through Fitchburg State College if they wish to pay for the credit.

Presently, to maintain full approval as a vocational teacher in Massachusetts, every two years each vocational teacher must document that he or she has completed:

- 60 hours of additional on-the-job experience, either paid or unpaid, but related to the occupational area taught; or
- 3 semester hours of additional academic credit in an educational or technical area related to the teacher's instructional area; or
- Any other learning experiences which have received the prior approval of the Division of Occupational Education.

B. The State Colleges and Delivery of Vocational Teacher Training

1. Background and Introduction

Massachusetts Chapter 74 regulations mandate that eighteen credit hours of teacher training must be completed for full approval as a vocational instructor. The content of the eighteen credits is left to the discretion of the Office of Professional Development within the Division of Occupational Education. Currently a list of basic course areas is stipulated which must be covered by completing either the specified occupational education courses offered through the state college system or by documenting the completion of equivalent coursework or training. Although the Office of Professional Development had disseminated to the state colleges a set of 57 objectives dating back to 1971 to be covered in the vocational education courses and has approved the colleges' course outlines, little formal work has been done by the state prior to this study to ensure that the content of these courses remains up-to-date with the changing needs for vocational teacher training.

Boston State College, Fitchburg State College, Westfield State College, and the University of Massachusetts in Amherst are the institutions of higher education which presently offer occupational education courses for full teacher approval by the state. The state colleges offer the required courses through their divisions of graduate studies and continuing education, while the university offers a particular undergraduate program of study through its school of education. Each of these institutions has a great deal of autonomy in the development and delivery of the coursework required by the state.

The program of study for teacher approval is quite different at the University of Massachusetts and is one example of the several ways in which teachers in different occupational areas obtain full approval status. The training program for vocational agriculture teachers is more extensive than for the other occupational areas. Students must obtain a bachelor's degree in an agriculture-related field before they are admitted into the 22-credit teacher training program at the university. As part of the required 22 credits, a 12-credit practicum in teaching is combined with coursework to cover the required content objectives as well as to provide supervised practice teaching.

There is presently neither a requirement nor an opportunity for supervised practice teaching by provisionally-approved teachers in most occupational areas. Teachers approved in home economics and those in distributive education with a business education background usually can document student teaching as a part of their degree requirements. In any event, to proceed from provisional approval to full approval in all occupational areas, a teacher candidate must take the required 18 credits or document equivalent coursework.

The majority of vocational teacher training, however, takes place at the three state colleges, and Fitchburg State College enrolls the majority of teachers taking training. Each of the colleges is allowed to develop the standard course offerings within the specified objectives outline.

In terms of outreach and the dissemination of accurate information to teacher trainees deciding which elective courses to take, course catalog descriptions may be very important. As the major source of publicity within the college, the teacher training catalog descriptions should be clear, concise, and explain the relevance of course content to vocational teaching. The major vehicle for advertising vocational education coursework is through tabloid flyers promulgated by the divisions of graduate studies and continuing education at the various colleges. These publications are quite explicit and complete vis-a-vis what is necessary to enroll in the coursework. Because Westfield State College and Fitchburg State College offer undergraduate and graduate degrees in vocational education, a description of degree requirements and course descriptions are presented in college catalogs. Course descriptions differ among the colleges with different emphasis on each course content being presented. What is missing in print is the sequence of coursework that is best for the individual. Counseling is available once a candidate gets into the system.

Although each college had sufficient to superior internal recordkeeping and tracking systems and the various individuals responsible knew the procedures well, a typical candidate seeking information is at a disadvantage and can be referred back and forth between the college and the Department of Education unless that candidate knows the system and knows explicitly which questions to ask of whom. It appears that a part of this confusion is due to the fact that there are many legitimate paths that a candidate can follow and professional courtesy dictates that the colleges will not answer questions for the Department of Education and the Department of

Education will not answer a candidate's question concerning the colleges. Everything is polite and professional, but is overlaid with bureaucratic caution.

There is little evidence of coordination among the colleges in their course offerings and little standardization of content within each of the required courses.

Vocational education teacher training in Massachusetts is administered and delivered largely on a geographical basis. Westfield State College is primarily involved in the western part of the state, Boston State College is primarily involved in the city of Boston and its suburbs (within the Route 128 geographical belt), and Fitchburg State College manages the widespread central area. While there are a few exceptions to this geographical distribution of offerings among the three colleges, each one essentially manages its own geographic region in terms of teacher training outreach, information dissemination, and classroom sites on and off campus. There is little or no formal coordination among the colleges or by the state to ensure that, in fact, all teachers seeking full approval receive the necessary information or outreach and that classroom locations are reasonably accessible to all.

For example, each spring the Office of Professional Development compiles a list of those passing the trade competency tests and who are now provisionally approved to teach. This list is then forwarded to the three state colleges. Each college is then assumed to mail its materials or informational brochures on their course offerings to those on the list within their own geographic area of the state, but it is unclear whether or not this outreach is always accomplished and reaches all who are newly provisionally approved. A brief description of occupational education teacher training at the three colleges reveals the need for greater coordination and cooperation among them.

2. The Colleges

a. *Fitchburg State College:*

Approximately 75% of provisionally-approved teachers take their teacher training courses at Fitchburg State College which has the oldest of the three colleges' occupational education programs. The administration of teacher training at Fitchburg State College is well organized, including a tracking mechanism for teacher trainees as they complete their coursework. Fitchburg State College is probably the most traditionally oriented of the three state colleges in its approach to occupational education and teacher training. The college offers an undergraduate degree in vocational education and graduate degrees in occupational and career education through the Division of Graduate Studies and Continuing Education.

As soon as the list of new provisionally-approved teachers becomes available each spring, Fitchburg State College mails a memorandum to people on the list informing them of the 18-credit requirement for teacher training. The prerequisite course, Foundations of Occupational Education, is offered during the summer session to provide teachers within their area with the opportunity to receive some basic training prior to the commencement of their teaching in the fall.

Fitchburg State College offers all its' teacher training courses at many off-campus locations across the state, from Worcester to Lawrence to New Bedford.

Fitchburg State College's program for vocational instructors of special needs students is comprised of four 3-credit courses and a 3-credit practicum. The practicum has been delayed as an approval requirement at all three colleges at this time, however, due to problems such as lack of practicum classrooms or shops that are available when teachers are off from their full-time teaching positions.

Although the state's Office of Professional Development will accept appropriate 15-credit hours in special education vocational teaching from any approved program, Fitchburg State College requires that all those in their program must take all their coursework at Fitchburg State College, even if they have completed credits at another college.

Fitchburg State College also offers one of the two special bilingual-vocational teacher training programs in the state funded by the Department of Education. It is planned to phase out special funding of these programs over the next year or two. Offered at the University of Massachusetts Boston campus as an independent program, the Fitchburg State College bilingual approval program is an organized set of support services and coursework for bilingual tradespeople seeking approval as vocational teachers. The program offers all of the required 18 teacher training credits and also provides support for its' candidates going through the competency testing stage.

A further reflection of the extent to which Fitchburg State College is greatly involved in the vocational teacher approval process in the state is their funding for a grant, now in its' third year, to review, revise, and administer the statewide trade competency tests which lead to provisional approval as a vocational teacher. Improvement in the competency testing process has also included informational outreach, the translation of tests into other languages, and the creation of standardized testing, scoring, and reporting procedures.

The extent of Fitchburg State College's involvement in the state's teacher training and approval process far overshadows the involvement of either of the other two state colleges, both in numbers of teacher trainees and in the diversity of their programs. Changes in the traditional directions of vocational education in Massachusetts could, therefore, have the greatest impact upon and perhaps the greatest response and input from Fitchburg State College's occupational education programs.

b. *Westfield State College:*

The smallest of the three state colleges, Westfield State College, has been involved in vocational education since the 1950's. It enrolls approximately 10% of teacher trainees in the state. From 1977 through the early part of 1981, the position of coordinator for occupational education was ill-defined. In the spring of 1981, the position was formalized as a half-time assignment. The present coordinator is a tenured professor of education in the Department of Education at Westfield and is on half-time assignment to the Division of Graduate Studies and Continuing Education to oversee vocational education courses. The coordinator meets all vocational education teachers taking coursework and also functions in a counseling capacity for them. The clerical staff of the Division of Graduate Studies and Continuing Education handles the details involved with enrolling students in vocational education coursework, allowing for continuity in the absence of a full-time coordinator.

One of the substitution courses offered by the other state colleges, "Advanced Methods of Teaching in Vocational Education," is not offered by Westfield State College, therefore all its teacher trainees complete the 6-credit "Foundations" course. This is consistent with the local vocational school administrators' requirement that all their teachers complete the foundations course rather than the alternative. Westfield State College's vocational teacher training courses are held on campus as a rule, although courses have been offered off-campus in Pittsfield in the past.

Both the bilingual and the minority recruitment programs for vocational teacher approval, which include teacher training, are also offered at Westfield State College. Funded by the Division of Occupational Education (as is the program at Fitchburg State College), the program is operated through the Office of Graduate Studies and Continuing Education, though independently from the half-time coordinator for vocational education.

In recent years, Westfield State College has been involved in experimental programs using competency-based curricula.

The college also offers an undergraduate and two graduate degrees in occupational education through the Division of Graduate Studies and Continuing Education. The special education vocational teacher training program (a program for approval as vocational instructors of special needs students) is also offered at Westfield State College. Transfer credits are accepted from other similarly approved programs.

c. *Boston State College:*

Although Boston State College as a whole is under a great deal of strain due to its' mandated merger with the University of Massachusetts at Boston, the Division of Graduate Studies and Continuing Education has as yet been largely unaffected. Slightly larger in size than Westfield's program, Boston State enrolls approximately 15% of vocational teacher trainees in the state.

Boston State College has recently reorganized and upgraded its' vocational teacher training program. A full-time director of industrial technology was hired for the first time in the spring of 1981. Program administration is still in its development stage and course curricula are being fully reviewed and revised.

The revised curricula at the college are based on a combination of the pre-1971 Division of Occupational Education's 57 objectives for training and Ohio State University's 100 Performance-Based Teacher Education (PBTE) curriculum modules. Sets of Ohio State University's materials have been ordered for use by the program, and the PBTE vocational teacher competency profile form is being used as the basis for mapping each teacher trainee's progress through the coursework. The director of industrial technology is working closely with the instructors of the vocational teacher training courses to evaluate and revise course objectives and content.

As of this fall, the vocational teacher training courses are held both on campus and at off-campus sites. At Boston State College, these courses are offered at both the undergraduate and graduate degree level, although the 18 credits of vocational teacher training required by the state do not comprise a formal degree program of study.

Boston State College offers a special minority recruitment program for vocational teacher approval under a grant from the Division of Occupational education administered by the Director of Industrial Technology.

d. *Adjunct Teacher Training Programs:*

In addition to the major vocational education coursework at the three state colleges described above, other institutions are involved in vocational teacher training.

The University of Massachusetts at Amherst is the only institution in the commonwealth which offers teacher training in vocational agriculture. It is also the only full-time day school program with tenure track faculty in the state which offers vocational teacher training. The program is small, enrolling approximately 12-16 vocational agriculture teacher trainees each year, all of whom usually are immediately placed in teaching positions upon their completion of training. This program is different from other vocational teacher training programs in Massachusetts because the requirements for the vocational agriculture program at the University conform to the National Advisory Committee's "Standards for Quality Vocational Programs in Agricultural/Agribusiness Education" which includes a requirement of student teaching.

A second adjunct teacher training program, offered at Boston University, is for vocational instructors of special needs students. Boston University's training is structured as three 4-credit courses as compared with the four 3-credit courses offered at Fitchburg and Westfield State Colleges. The program has been relocated on campus twice in the year and one-half since it was established at Boston University. This instability has contributed to a situation in which it is very difficult to obtain information from or about the program on vocational instructors of special needs students.

Finally, Bridgewater State College offers the 6-credit prerequisite "Foundations" course on the campus of Massachusetts Maritime Academy for the convenience of teacher trainees in that area.

3. The Delivery System

a. *Teacher Trainers:*

Except for the vocational agriculture program at the University of Massachusetts at Amherst which is a day school program with two full-time instructors, none of the other vocational teacher training programs have a cohesive, full-time staff. No tenure is available, except at the university, and any full-time state college instructor who teaches a vocational course does so as a course overload. Most vocational teacher training instructors used by the state colleges, however, are local secondary vocational school employees, primarily administrators, with a few vocational school guidance counselors and instructors. A few teacher trainers are Department of Education regional center staff.

Often recruited through the local, informal vocational education networks, instructors hired for the teacher training courses need a bachelor's degree to teach at Boston State College or Westfield State College and a master's degree to teach at Fitchburg State College.

Respondents to the approved teacher questionnaire were generally very satisfied with the competency of their trainers, 77% reporting that they felt "a great deal" that the instructors knew their subject matter well, and 65% that instructors were well prepared for class. Only 3% of the teachers felt that the instructors were "not at all" prepared for class.

b. *Teacher Training Coursework Scheduling*

Consistent with general adult education principles, the days of the week and the times of day that vocational teacher training courses are offered are generally convenient for most professionally-approved teachers with full-time teaching positions.

The only major scheduling problem has been with implementing the 3-credit practicum requirement established for the advanced approval as a vocational instructor of special needs students.

Due to Proposition 2 1/2, the few sites that offered late afternoon instructor education programs for special needs students have been cut back or eliminated. These late afternoon programs were the only convenient opportunity for full-time employed vocational teachers to practice teach with special needs students. Vocational teachers have also been unable to obtain release time from their teaching positions in order to complete the special education practicum requirement during the school day. The temporary solution has been to delay the 3-credit practicum requirement for approval as a special education vocational teacher.

Teacher training courses are offered in several geographically dispersed locations across the state, with Fitchburg State College offerings at five off-campus sites covering a broad geographic area. While travel to courses was not a problem for most respondents to the questionnaire, for many there is still the possibility of having to travel for an hour or more to a course that is required, especially the "Foundations" course which meets twice during the week for a semester.

Fitchburg State College offers all of its teacher training courses off-campus at various secondary vocational schools across a wide area of the commonwealth. Westfield State College and Boston State College offer most of their courses on campus, although Westfield State College will offer courses in Pittsfield as the need arises, and Boston State College now offers some of its courses at two secondary schools in Boston and in Roxbury.

c. *Course Offerings:*

Information was obtained from Fitchburg State College and Westfield State College on course offerings, tuition waivers, and enrollments going back to the summer of 1978. This information was not available from Boston State College. At both Fitchburg State College and Westfield State College, the largest number of course section cancellations relative to the number of sections offered were for the non-vocational psychology courses and for "History and Philosophy of Occupational Education." With the addition of the vocational education psychology course offered at Fitchburg State College, these two courses also enroll the smallest number of teacher trainees.

This enrollment record for the "History and Philosophy" course is consistent with other data collected in this study. Respondents to both the interview guide and the teacher questionnaire indicated this course most often as a course which should be dropped as irrelevant or unnecessary to vocational teacher training. In addition, many of the superintendent-directors of vocational schools we interviewed preferred or required that their new teachers take the "Foundations of Occupational Education" course because they believe that the option allowed by the state for teachers with a bachelor's degree to take "History and Philosophy" and "Advanced Teaching Methods" is not an adequate equivalency. A further consequence is that "Advanced Teaching Methods" has not been offered for teacher training since at least the fall of 1978.

The enrollment record for the psychology courses is inconsistent with the stated needs of vocational teachers responding to the mail questionnaire. One of the most frequently indicated needs of teachers is in the area of adolescent psychology. Teachers feel they are not adequately trained to understand or counsel their students. This finding, combined with low enrollment figures and the often-expressed evaluation by teachers of their training that it is too theoretical, indicates that the psychology courses presently offered by the colleges although useful are not fulfilling all the teachers' needs for training relevant to the classroom. It is interesting to note that of 1,172 student enrollments in the "Foundations" course during this time period, only 90 students elected to take the course during one of the three summers in this time period. Because the foundations course is the first course taken in virtually all instances, it can be assumed that a significant number of first year teachers begin teaching with no coursework.

d. *Enrollment in Courses:*

Prior to 1977, passing the written and practical trade competency tests was a prerequisite to admission to the vocational teacher training courses. Since that time, completion of the tests has not been required to enroll in the courses, so other than vocational teacher trainees may elect to take them. Most students in the courses, however, are still vocational teachers seeking full approval status.

At the advanced teacher training level, such as for approval as vocational instructor of special needs students, a significant number of those enrolled are non-vocational education students taking the courses as electives.

Roughly one-quarter of teacher trainees are eligible for tuition waivers for their teacher training coursework. Because vocational coursework is offered through divisions of graduate studies and continuing education, they must be self-supporting with tuition-paying students. A rule of thumb is that twelve students are needed to run such a course. A simple example is, if twelve students register and seven have a tuition waiver, the course cannot pay for itself and is cancelled. For the period fall 78 to fall 81, approximately 19% of courses at Fitchburg State College and Westfield State College were cancelled due to low enrollment and most of these cancellations were due to tuition waivers.

C. Vocational Teacher Training

This section presents findings from the teacher questionnaire and from the interviews with other vocational educators in the state on the nature of vocational education teacher training in Massachusetts. The findings are grouped under three major headings:

- adult education principles and practices in the delivery of teacher training;
- teacher training curriculum in the required coursework; and,
- assessments and recommendations by survey respondents for vocational teacher training.

1. Adult Education Principles and Practices

Vocational teacher trainees are an older student population as a whole, with very different needs from the traditional college undergraduate. Therefore, the questionnaire submitted to vocational teachers for this study asked several questions which address the extent to which various adult education principles are followed in the state colleges' teacher training programs.

The questionnaire asked respondents how long it had been since they last attended any school when they first began taking the required teacher training courses (Table 4). Only 29% of the respondents had been out of school one year or less, however more than half (56%) had been out of school for five years or more. Especially relevant to the practices of adult education, 44% of the teachers responding to the questionnaire reported not attending any school for 10 years or more, and 16% for twenty years or more.

Six questions were asked of teachers on the extent to which certain adult education practices were employed in the teacher training courses they had taken towards approval (Table 5). Respondents indicated general satisfaction with the level at which the courses are conducted, and with the usefulness of course material in teaching the trainees' own students, 95% and 92%, respectively, indicating "somewhat" or "a great deal" of satisfaction in these two areas. Similarly, 89% of respondents observed that experiences of class participants were used "somewhat" or "a great deal" as teaching examples or in class discussion, and 93% felt that the instructors were to some degree sensitive to individual interests, needs, and values. Ninety-four percent of respondents felt free "somewhat" or "a great deal" to express ideas in class. Conversely, 72% of teachers reported having no say in determining course content or format, and only 3% reported "a great deal" of say in determining course content or format. Therefore, it appears that although teacher trainees had little or no say in determining what they needed in terms of specific course content or formating, to the extent to which these questions address adult education practices that exist in the present teacher training, several adult education principles are addressed at least somewhat within the present course structure.

Even more specifically in terms of adult education practices, teachers were asked about the usefulness of several teaching techniques and materials that may have been used in their required coursework towards a full approval (Table 6). Practical demonstrations and group discussions were felt by 74.3% and 70.2% of respondents to be "very useful" techniques in their teacher training courses. Handouts or articles and lectures were ranked by respondents next as somewhat less useful, 54.2% and 42.0% ranking handouts/articles and lectures, respectively, as "very useful." There was less satisfaction overall with the usefulness of the remaining techniques ranked by respondents. While almost half (48.5%) of teachers felt role playing to be a very useful technique, 10% felt it to be "not at all useful." Films or other audio-visual materials were used less often than most other techniques in the teacher training courses as reported by respondents to the questionnaire, and the largest percentage of respondents (44.6%) found them to be only "somewhat useful." Guest speakers were reported as the least often used of the techniques, and were rated about equally in usefulness to films. The majority of respondents were dissatisfied with the usefulness of the texts or books and the recommended reading or library work in their required courses. Only 27.0% rated the texts as very useful, and only 20.1% rated the recommended reading as very useful to them.

Table 4

TIME AWAY FROM SCHOOL

Questionnaire: "When you first began taking the required teacher training courses, how long had it been since you last attended any school?"

	Number	Percent	Cumulative Percent
One year or less	78	29%	29%
Two to four years	41	15%	44%
Five to nine years	31	12%	56%
Ten to fourteen years	47	18%	74%
Fifteen to nineteen years	24	10%	84%
Twenty years or more	44	16%	100%
	n = 265	100%	

Table 5

ADULT EDUCATION PRACTICES IN TEACHER TRAINING COURSES

Questionnaire: "To what extent do the following statements generally describe the required teacher-training coursework you have taken for vocational teacher approval?"

	Not at All*	Somewhat	A Great Deal	Total N
The course material was useful in teaching my own students.	20 (8.5)	129 (54.7)	87 (36.9)	236
Experiences of class participants were used as teaching examples or in-class discussion.	27 (10.6)	125 (49.0)	103 (40.4)	255
The level at which the courses are conducted was good for me.	14 (5.3)	113 (42.5)	139 (52.3)	266
The instructor was sensitive to individual interests, needs, and values.	18 (6.7)	116 (43.0)	136 (50.4)	270
I had a say in determining course content or format.	190 (72.0)	65 (24.6)	9 (3.4)	264
I felt free to express ideas in class.	16 (5.9)	81 (29.9)	174 (64.2)	271

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[*] The number of responses to each question is reported. Percentages are given in parentheses.

70

Table 6

USEFULNESS OF TEACHING TECHNIQUES AND COURSE MATERIALS

Questionnaire: "How useful were the following teaching techniques and course materials in the required coursework you have taken?"

	Useful*	Somewhat Useful	Not at All Useful	Total
Practical Demonstrations**	185 (74.3)	58 (23.3)	6 (2.4)	249
Group Discussions	177 (70.2)	71 (28.2)	4 (1.6)	252
Handouts/Articles	143 (54.2)	108 (40.9)	13 (4.9)	264
Lectures	107 (42.0)	135 (52.9)	13 (5.1)	255
Role Playing/Experiential Exercises	111 (48.5)	95 (41.5)	23 (10.0)	229
Films/AV	76 (39.0)	87 (44.6)	32 (16.4)	195
Guest Speakers	66 (37.1)	78 (43.8)	34 (19.1)	178
Texts/Books	62 (27.0)	136 (59.1)	32 (13.9)	230
Recommended Reading/Library	46 (20.1)	146 (63.8)	37 (16.2)	229

*The number of valid, applicable responses for each item is reported. Percentages are given in parentheses.

**Items are listed in approximate rank ordering from those reported as most useful to least useful as teaching techniques or materials.

Related also to the issue of adult education practices is the convenience of attending present course offerings necessary for obtaining approval as a vocational education teacher. To adults who hold full time jobs and must meet family responsibilities as well, the convenience of teacher training coursework becomes significant. Teachers responding to the questionnaire felt that, in general, course offerings were convenient in both time and location (Table 7). When asked if the courses met at a convenient time of day and on convenient days of the week, 87% and 88% of respondents, respectively, responded that the course scheduling was "usually" or "always" convenient. However, 11% of respondents to both questions responded that the course schedules were only "sometimes" convenient, and a few respondents felt that the times of day and the days of the week were "never" convenient (1.9% and 1.1%, respectively).

Travel to the courses was less convenient. Travel was a problem "sometimes" to "always" for 55.7% of respondents, and 16.9% felt that travel was "usually" or "always" a problem.

The questionnaire asked teachers directly what are the most convenient times of the day, of the week, and of the year for them to take courses. The scheduling preferences of provisionally approved teachers taking teacher training courses are somewhat different from the preferences of fully approved teachers taking advanced coursework (Table 8). When asked which is the most convenient time of year, fall semester, spring semester, or summer session, the majority of teachers favored fall semester (69.4% and 52.6%, respectively, for teachers with provisional and full approval). Teachers with full approval found summer session slightly more convenient than did teachers with provisional approval (21.9% and 13.5%, respectively).

There was no difference among teachers in the most convenient time during the week to take courses. Sixty-two percent felt that weekdays are most convenient and 35.7% felt that Saturdays are most convenient. Both provisionally and fully approved teachers felt that the most convenient time of day for them to take courses is in the evenings (64.0% and 49.2%, respectively). Approximately one third of all teachers surveyed prefer mornings for their scheduled coursework. Ten percent of fully approved teachers find afternoons most convenient compared to only 2% of provisionally approved teachers.

2. Teacher Training Curriculum

Several questions were asked of teachers and other vocational educators in the state on the content of the required teacher training courses. Questions and responses dealt with the adequacy of skills training overall and with the extent to which training covers certain specific areas relating to vocational teaching. The state department of education staff, college administrators, local secondary school vocational program administrators, and teacher trainers were asked in the interview, "Do you think that vocational teachers receive enough training in terms of teaching skills to teach shop students?" Over two-thirds (67.1%) of those responding replied, "no," and another 15.2% replied, "it depends" (Table 9). Respondents were asked to elaborate on their response to this question, and most expressed dissatisfaction with the training overall, or mentioned the need for more or better training in a particular area, such as in methods, the content of a particular

Table 7

CONVENIENCE OF COURSE OFFERINGS

Questionnaire: "Overall, concerning the required teacher training credits:

	Never*	Some-times	Usually	Always	Total N
a. Did the course(s) meet at a convenient time of day?	5 (1.9)	30 (11.1)	120 (44.4)	115 (42.6)	270
b. Did the course(s) meet on a convenient day(s) of the week?	3 (1.1)	29 (10.8)	120 (44.6)	117 (43.5)	269
c. Was travel to the course(s) a problem?	121 (44.3)	106 (38.8)	27 (9.9)	19 (7.0)	273

*The number of valid responses to each question is reported. Percentages are given in parentheses.

Table 8

MOST CONVENIENT COURSE SCHEDULES

Questionnaire: "When is it most convenient for you to take required coursework either for approval credit or for professional development?"

Time of Year	Provisional Approval*	Full Approval	Total
Fall Semester	77 (69.4)	101 (52.6)	178 (58.7)
Spring Semester	11 (9.9)	26 (13.5)	37 (12.2)
Summer Session	15 (13.5)	42 (21.9)	57 (18.8)
Combinations of Above	8 (7.2)	23 (12.0)	31 (10.2)
TOTAL	111 (36.6)	192 (63.4)	303 (100.0)
Time During Week			
Weekdays	70 (64.2)	116 (60.1)	186 (61.6)
Saturdays	38 (34.9)	71 (36.8)	109 (36.1)
Anytime	1 (0.9)	6 (3.1)	7 (2.3)
TOTAL	109 (36.1)	193 (63.9)	302 (100.0)
Time of Day			
Mornings	35 (31.5)	69 (35.4)	104 (33.9)
Afternoons	2 (1.8)	20 (10.3)	22 (7.2)
Evenings	71 (64.0)	96 (49.2)	167 (54.6)
Combinations of Above	3 (2.7)	10 (5.1)	13 (4.2)
TOTAL	111 (36.3)	195 (63.7)	306 (100.0)

*The number of valid responses to each question is reported. Percentages are given in parentheses.

Table 9

SURVEY RESPONSES ON CONTENT AREAS IN TEACHER TRAINING COURSEWORK

A. Interviews:	Yes	No	Depends	Other	Valid # of Cases
Do you think that vocational teachers receive enough training in terms of teaching skills to teach shop students?	13 (16.5)	53 (67.1)	12 (15.2)	1 (1.3)	79
Do you feel that vocational teachers are adequately prepared to design and to modify curriculum content?	15 (20.3)	43 (58.1)	13 (17.6)	3 (4.1)	74

B. Questionnaire:	A Great Deal	Some-what	Not at all	Total
To what extent do you feel you have been prepared to design or revise a proper curriculum to teach your trade?	150* (50.3)	131 (44.0)	17 (5.7)	298
To what extent do you feel you have been properly informed of the health and safety requirements for teaching your trade?	140 (47.9)	115 (39.4)	37 (12.7)	292

*The number of valid responses for each question is reported. Percentages are given in parentheses.

course, and the need for some form of supervised teacher training, or the demonstration of teaching skills. In addition to comments advising revision of the teacher training curriculum in part or in whole and the addition of a practice teaching requirement, several other assessments were offered. Some respondents (10.7%) felt the training is not practical in its'orientation, but rather focuses too much on the philosophy and theory of vocational education and teaching. Another 7.1% felt that the courses were not demanding enough and that they should be made tougher and better. Three interview respondents raised the issue that it is those teachers who receive waivers to teach that are the ones who especially need the teacher training.

The surveys asked directly about several specific areas of training covered in the coursework. Vocational educators were asked, "Do you feel that vocational teachers are adequately prepared to design and modify curriculum content?" Almost 60% (58.1%) responded, "no," and another 17.6% of interview respondents felt that it depends on each trainee's experiences and background or from the teacher learning it on the job. The teachers responding to the questionnaire who have attained either provisional or full approval since 1975 expressed more confidence in their curriculum skills training (Table 9). When asked, "To what extent do you feel you have been adequately prepared to design or revise a proper curriculum to teach your trade?," half the respondents (50.3%) felt "a great deal." The other half of the respondents, however, felt they had only been prepared "somewhat" (44.0%) or "not at all" (5.7%).

Teachers were also asked the extent to which they have been properly informed in their training of the health and safety requirements for teaching their trade. More than 10% (12.7%) felt "not at all," and 39.4% felt only "somewhat" informed. Again, only about half the teachers responding to this question (47.9%) felt their training properly informed them on health and safety requirements for teaching in their trade.

One of the increasingly felt changes in vocational education is the requirement that vocational teachers be prepared to teach a more diverse mix of students in the shop and classroom. Vocational educators in the study interview were asked if they believed the average vocational instructor is adequately prepared to deal with certain kinds of students (Table 10). With respect to "the typical shop student," two-thirds of those interviewed (66.2%) responded yes, the average instructor is prepared. However, almost one-quarter (23.4%) responded no. Several respondents stated that "there is no such thing as the typical shop student anymore." Interviewees were about equally split in their belief that instructors are or are not adequately prepared to deal with girls or boys in shops not traditionally identified with their sex (41.0% responding yes, and 48.2% responding no). Two-thirds of those interviewed (66.2%) do not believe that the average vocational instructor is adequately prepared to deal with the bilingual student. A common comment was that it presents cultural, not language, problems. With respect to the special education student, 22.0% of those interviewed responded that it depends on many circumstances whether or not the instructor is adequately prepared, but 50.0% of the respondents believe that the average instructor is not prepared.

Table 10

PREPARATION TO TEACH A VARIED MIX OF STUDENTS

A. Interview: "Do you believe the average vocational instructor is adequately prepared to deal with:

	Yes	No	Depends	Total
The typical shop student?	51* (66.2)	18 (23.4)	8 (10.4)	77
Students in shops not traditionally identified with their sex?	34 (41.0)	40 (48.2)	9 (10.8)	83
The special education student?	23 (28.0)	41 (50.0)	18 (22.0)	82
The bilingual student?	18 (25.4)	47 (66.2)	6 (8.5)	71

B. Questionnaire: "To what extent have the following issues for teachers been discussed in the required coursework you have taken for vocational teacher approval?"

	A Great Deal	Somewhat	Not at all	Total
Issues concerning sex stereotyping of shop students were discussed.	50 (19.1)	135 (51.5)	77 (29.4)	262
Language and cultural differences among shop students were discussed.	34 (13.0)	143 (54.6)	85 (32.4)	262
Issues concerning handicapped students in shop were discussed.	72 (27.0)	143 (53.6)	52 (19.5)	267

* The number of valid responses is reported. Percentages are given in parentheses.

Teachers in the questionnaire were asked a similar set of questions on the extent to which issues involving an increasingly diversified student body are discussed in the required teacher training coursework. At least two-thirds of teachers responding to these questions indicated that issues concerning language and cultural differences, sex stereotyping, and handicapped students were discussed either somewhat or a great deal in their required coursework (Table 10). For these three areas, issues concerning handicapped students were discussed more than the other issues, 19.5% reporting that handicapped student issues were not at all discussed in their courses, versus 29.4% and 32.4%, respectively, for sex stereotyping and language and cultural difference issues reported as not at all discussed.

The questionnaire also asked teachers the extent to which other issues affecting vocational students were discussed in their teacher training coursework. As a group, issues involving the development of individual student character are discussed more exclusively than more general issues in vocational education which may have an impact on students (Table 11). Each of the six issues was discussed somewhat or a great deal in the teacher training coursework as reported by approximately 80-90% of teacher respondents. In rank order of the percent of teachers responding "a great deal" on the extent to which these issues were discussed in their training, the issues are:

1) student discipline;

2) student self-worth;

3) student cooperation with others;

4) student job placement;

5) relationship between vocational and academic education; and

6) economic trends affecting shop students.

Finally, in terms of specific content areas covered in the teacher training coursework required for approval, teachers were asked in the questionnaire the extent to which they need or needed to know more from their training about special education, sex stereotyping, and affirmative action issues. For all three questions there was a significant proportion of respondents who chose to neither agree nor disagree with their need to know more about these issues in their training (34.3% for sex stereotyping, 32.6% for affirmative action, and 23.9% for special education issues--Table 12).

As for the previous questions on these issues, respondents generally agreed that they needed to know more about special education issues, but were less in agreement on the other two issues.

On the statement that more training on sex stereotyping issues is needed, respondents tended to disagree (38.5% overall) more than agree with the

Table 11

ISSUES COVERED IN THE REQUIRED COURSEWORK

Questionnaire: "To what extent have the following issues for teachers been discussed in the required coursework you have taken for vocational teacher approval?"

	A Great Deal*	Somewhat	Not at All	Valid Total
General Issues:				
Issues concerning job placement of shop students were discussed.	84 (31.5)	144 (53.9)	39 (14.6)	267
The relationship between vocational and academic education was discussed.	74 (27.8)	147 (55.3)	45 (16.9)	266
Issues concerning economic trends affecting shop students were discussed.	56 (21.2)	150 (56.8)	58 (22.0)	264
Student Attitudes:				
Issues concerning student discipline in the shop were discussed.	125 (47.0)	118 (44.4)	23 (8.7)	266
Instilling self-worth in vocational students was discussed.	108 (40.8)	122 (46.0)	35 (13.2)	265
Issues concerning shop students cooperating with others in shop were discussed.	86 (32.8)	135 (51.5)	41 (15.7)	262

*The number of valid responses to each item is reported. Percentages are given in parentheses.

Table 12

THE NEED FOR MORE EMPHASIS ON ISSUES AFFECTING VOCATIONAL TEACHING

A. Questionnare: "Please indicate how much you agree or disagree with the following statements:"

	Strongly Disagree*	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Total
I need(ed) to know more about issues concerning special education from my required 18 credits of coursework.	13 (4.9)	66 (25.0)	63 (23.9)	95 (36.0)	27 (10.2)	264
I need(ed) to know more about issues concerning sex stereotyping from my required 18 credits of coursework.	18 (6.8)	84 (31.7)	91 (34.3)	57 (21.5)	15 (5.7)	265
I need(ed) to know more about affirmative action issues from my 18 credits of coursework.	18 (6.9)	67 (25.7)	85 (32.6)	74 28.4)	17 (6.5)	261

B. Interviews: "Should vocational teacher training place a greater emphasis on issues associated with:"

	Yes	No	Depends	Other	Total Valid Responses
a) bilingual education?	34 (47.9)	30 (42.3)	5 (7.0)	2 (2.8)	71
b) special education?	61 (76.3)	17 (21.2)	2 (2.5)	-0-	80
c) sex equity?	53 (67.9)	19 (24.4)	5 (6.4)	1 (1.3)	78

*The number of valid responses for each item is reported. Percentages are given in parentheses.

statement. On the need for more training on affirmative action issues, respondents were equally split among those agreeing, disagreeing, and neither agreeing nor disagreeing.

A somewhat different set of questions was asked of vocational educators interviewed across the state on the need for a greater emphasis in teacher training on special education, sex equity, and bilingual education. Over three-quarters of those interviewed (76.3%) felt a greater emphasis should be placed on training in special education issues, over two-thirds (67.9%) felt a greater emphasis should be placed on training in sex equity issues, but the opinion was approximately equally split on whether or not a greater emphasis should be placed on training in bilingual education issues (47.9% responding yes, 42.3% responding no, and 9.8% responding it depends or another comment.

Asked to consider overall the required teacher training coursework they have taken for vocational teacher approval, teachers responding to the questionnaire were asked the extent to which "the same material was often covered in more than one required course." Thirty percent of respondents (30.3%) felt that frequent coverage of the same material in the required courses was "not at all" a problem (Table 13). However, 17.6% responded this occurred "a great deal," and over half of the respondents (52.1%) felt this occurred "somewhat" in the required teacher training.

Two open-ended response items were included in the questionnaire to obtain teachers' opinions on the appropriateness of the present teacher training content. Up to three responses to each question were coded and grouped according to the type of suggestion made by the respondent. To the question, "In the required courses you have taken toward approval, was there anything which should have been de-emphasized or dropped as unnecessary?" Eighty-seven teachers (57.2%) replied "no," and 65 teachers (42.8%) gave a specific recommendation of a course, content area, or course format which should be dropped or de-emphasized or gave a general assessment of the training (Table 14). Over half of all responses to this question (56.8%) mentioned a specific course which should be dropped, and another 23.5% of all responses cited a specific content area or course format which should be dropped or which is over-emphasized in training.

Teachers were also asked to recommend aspects or areas of teacher training which they feel are missing from the present required coursework. Seventy teachers (40.0%) responding to this question felt that there is nothing missing from teacher training (Table 15). Sixty percent of the 175 teachers responding to this question, however, made specific recommendations toward what should be included in training, but is not included or is not addressed in an appropriate or complete way.

Half of the responses making recommendations for what to add or include more of in teacher training cited specific teacher skills such as curriculum design and teaching methods (24.3%), broader issue or content areas relating to teaching such as student psychology and teaching special needs students

Table 13

REPEATED CONTENT IN THE REQUIRED 18 CREDITS

Questionnaire: "To what extent do the following statements generally describe the required teacher-training coursework you have taken for vocational teacher approval?"

	Not at All	Some-what	A Great Deal	Total
The same material was often covered in more than one required course.	72* (30.3)	124 (52.1)	42 (17.6)	238

*The number of valid responses is reported. Percentages are given in parentheses.

Table 14

CONTENT TO DE-EMPHASIZE OR DROP FROM TEACHER TRAINING

Questionnaire: "In the required courses you have taken toward vocational approval, was there anything which should have been de-emphasized or dropped as unnecessary?"[*]

	# of Times Mentioned	% of Responses[**]
A specific course	46	56.8%
A specific content area or course format	19	23.5%
"Most of the courses are unnecessary"	5	6.2%
"Repetition in the courses"	4	4.9%
Trade courses	2	2.5%
Other comment given	5	6.2%
TOTAL RESPONSES	81	100.0%

Number of cases with suggestions = 65 (42.8%)

Number of cases responding "no," i.e., there is nothing which should be de-emphasized or dropped = 87 (57.2%)

TOTAL VALID CASES = 152 (100.0%)

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[*] Up to three open-ended responses were coded per respondent, therefore the total number of responses (81) equals 124.6% of the number of cases (65) giving those responses.

[**] The percent of total course or content suggestions given by respondents is reported.

Table 15

CONTENT MISSING FROM TEACHER TRAINING

Questionnaire: "In the required courses you have taken toward vocational teacher approval, was there anything which should have been included and was not?"*

	# of Times Mentioned	% of Responses**
Content on how to teach (e.g., curriculum/lesson plans, methods, testing, motivating students)	46	24.3%
Content on issues in teaching (e.g., student psychology, special education, multi-cultural teaching, sex stereotyping)	35	18.5%
Content on how to run a shop (e.g., shop organization and management, safety, discipline)	27	14.3%
Administrative issues or working in schools (e.g., budgets, getting along with other school staff)	20	10.6%
Training format or technique (e.g., training kept up-to-date, use of audio-visual materials, and role-playing)	16	8.5%
Student teaching or practice teaching	15	7.9%
Teacher trainee basic skills (e.g., math, public speaking)	10	5.3%
Trade or subject matter	7	3.7%
Other content area given	13	6.9%
TOTAL RESPONSES	189	100.0%

Number of cases with suggestions = 105 (60.0%)

Number of cases responding "no," there is nothing that should have been included and was not. = 70 (40.0%)

TOTAL VALID CASES = 175 (100.0%)

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*Up to three open-ended responses were coded per respondent, therefore the total number of responses (189) equals 180% of the number of cases (105) giving those responses.

**The percent of total content area suggestions given by respondents is reported.

(18.5%), and the need for practice teaching as a part of training (7.9%). Other areas teachers mentioned as needing greater emphasis in their training were in how to run a shop or classroom such as shop organization, management, and safety (14.3%), and content on the administrative and cooperative aspects of working in a school (10.6%).

Vocational educators across the state were also asked what should be included or expanded in teacher training and what should be de-emphasized or dropped from the current training coursework. Those interviewed in person made many more recommendations about the training content than did the recent teacher trainees responding to the mail questionnaire, but the type and frequency of content area mentioned was very much the same as that recommended by the teachers in terms of what areas of training are missing or which need more emphasis (Table 16).

The open-ended responses of those interviewed on repetitive, irrelevant, or outdated course content tend to characterize several of the study findings with respect to current teacher training in the state (same table as above). One-third of the responses to this question identified a specific course that needs to be dropped or revised, and over half of these (19.4% of total responses) cited the History and Philosophy of Occupational Education as an offender. Other responses to this question focused on the nature of teacher training coursework as a whole. Twenty-one percent of responses stated that the training content generally needs to be revised, especially in terms of course content which is redundant and content that is out-of-date. Another 17.7% of responses cited the coursework as generally too theoretically oriented and not focused on the practical needs and skills for teaching. A major revision of teacher training was cited as necessary in 11.3% of responses, and three responses (4.8%) stated that the courses should be prioritized. A relatively small percentage of responses, 9.7%, stated that vocational teacher training in Massachusetts is fine as it is.

3. Assessments of Training from the Surveys

A common response to survey questions was the desire for some form of student or practice teaching or a demonstration of teaching skills as a part of vocational teacher training in Massachusetts. The common assumption, however, is that no matter how desireable this would be, it is impractical within the present system of teacher approval and the hiring practices of local vocational schools or programs.

Ninety percent of vocational educators at the colleges, local vocational schools and programs, and the Department of Education interviewed for this study felt that practice teaching should be available as a part of vocational teacher training at the colleges (Table 17). When asked if practice teaching should be required, the majority of interview respondents still responded "yes" (71.4%), though significantly fewer than for only making it available. The difference in responses to the two questions is evenly distributed between a 10% increase in "it depends" responses when the question asks should practice teaching be required versus should it only be made available.

Table 16

CHANGES NEEDED IN TEACHER TRAINING CONTENT

Interview:	Yes	No	Depends	Valid Total
1. Do you think there are any areas of teacher training which are not covered or are not covered in sufficient depth & should be included or expanded within the required coursework?	68 (85.0)	7 (8.8)	5 (6.3)	80
2a. Do you think there are any areas of teacher training which are repetitive, irrelevant, or outdated and should be diminished or dropped from the required coursework?	35 (62.5)	18 (32.1)	3 (5.4)	56

2b.

Open-ended Responses: Areas of teacher training which are repetitive, irrelevant, or outdated and should be diminished or dropped from the required coursework:

	Number	Percent of Responses*
Specific course mentioned (History and Philosophy 19.4%) (Foundations 8.1%) (Other courses 6.4%)	21	33.9%
Training as a whole needs some revision (overlapping courses, out-of-date content)	13	21.0%
Courses generally are too theory oriented, not practical enough	11	17.7%
Major revision is necessary in training	7	11.3%
Teacher training is fine as it is	6	9.7%
Courses should be prioritized	3	4.8%
Other comments	1	1.6%
Total Responses =	62	100.0%

Number of cases with responses = 51

Total responses as a percent of the number of cases = 121.6%**

*The percent of total responses to this question by all respondents is reported.

**Up to three open-ended responses were coded per respondent, giving a total of 62 responses (121.6%) from 51 interview respondents.

TABLE 17

PRACTICE TEACHING AS A PART OF TEACHER TRAINING

Interviews:	Yes	No	Depends	Other	Total
"Should practice teaching be available as part of vocational teacher training at the colleges?"	75* (90.4)	4 (4.8)	3 (3.6)	1 (1.2)	83
"Should practice teaching be required as part of vocational teacher training at the colleges?"	60 (71.4)	12 (14.3)	11 (13.1)	1 (1.2)	84

Questionnaire:	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Strongly Agree	Agree	Total
"I think student teaching before teaching shop students should be a requirement in the approval process."						
Provisional Approval	9 (8.1)	31 (27.9)	30 (27.0)	36 (32.4)	5 (4.5)	111 (36.0)
Full Approval	19 (9.6)	30 (15.2)	30 (15.2)	82 (41.6)	36 (18.3)	197 (64.0)
TOTAL	28 (9.1)	61 (19.8)	60 (19.5)	118 (38.3)	41 (13.3)	308 (100.0)

*The number of valid responses for each question is reported. Percentages are given in parentheses.

The questionnaire asked teachers the extent to which they agree with the statement, "I think student teaching before teaching shop should be a requirement in the approval process." There was a significant difference in the responses of teachers who have full approval and have completed their training requirements, and teachers who have provisional approval and have more teacher training to complete (Table 17). Except for approximately the same percent who "strongly disagree" with making student teaching a requirement (8.1% for those with provisional approval and 9.6% for those with full approval), for the other response categories fully approved teachers were consistently about 10% or more in greater agreement with this as a requirement than provisionally approved teachers. Overall, 59.9% of teachers with full approval agreed or strongly agreed that student teaching should be a requirement versus 36.9% of those with provisional approval. This 23% difference may be attributable in part not only to the teachers' different statuses with respect to completing teacher training, but to the teachers not appreciating the value of a student teaching experience until they have completed other types of training requirements and have been teaching for several years.

Vocational educators were asked in the interview if they think that vocational teachers need more coursework than what is presently required. More than half (55.7%) responded "no," 13.9% said "it depends," and 27.8% said "yes," vocational teachers do need more coursework than the presently required 18 credits (Table 18). The interviews also asked, "Do you think that teacher training courses should be required for shop teachers before they are allowed to teach?" Almost half of those interviewed (47.6%) felt that shop teachers should be required to take training courses before they are allowed to teach, but many felt that this is impractical to put into practice given present hiring practices.

Table 19 presents the responses to four questionnaire items asked of teachers on the difficulty of coursework and on the value of vocational teacher training both in the abstract and to them personally. A significant difference was found between teachers with full versus those with provisional approval. Well over half of the former (57.4%) remember teacher training coursework as not at all difficult to satisfy, versus 36.0% of teachers with provisional approval who report the coursework as not at all difficult. And more than three times as many with provisional as with full approval (17.3% vs. 5.3%, respectively) report "a great deal" of difficulty satisfying the teacher training coursework requirement. As a very general question these differences are difficult to interpret as they could be attributable to changes over time in training such as in the sequencing of requirements, the scheduling of courses, or in the rigor or coursework, due to changes in the teacher trainee population over time, or due to errors in retrospection on the part of respondents who completed training several years ago.

Relevant to the issue of teacher versus tradesperson as the primary role of vocational teachers were two questionnaire items on teachers'

Table 18

EXTENT AND PRIORITY OF TEACHER TRAINING

Interviews:	Yes	No	Depends	Other	Total
"Do you think that vocational teachers need more coursework than the 18 credits which are presently required?"	22* (27.8)	44 (55.7)	11 (13.9)	2 (2.5)	79
"Do you think that teacher training courses should be required for shop teachers before they are allowed to teach?"	40 (47.6)	19 (22.6)	23 (27.4)	2 (2.4)	84

*The number of valid responses to each question is reported. Percentages are given in parentheses.

Table 19

TEACHER EVALUATIONS OF TEACHER TRAINING COURSEWORK

Questionnaire:	Provisional Approval	Full Approval	Total
How difficult was teacher training coursework to satisfy?			
Not at all	27*	108	135
	(36.0)	(57.4)	(51.3)
Somewhat	35	70	105
	(46.7)	(37.2)	(39.9)
A Great Deal	13	10	23
	(17.3)	(5.3)	(8.7)
TOTAL	75	188	263
	(28.5)	(71.5)	(100.0)
Having 6 years trade experience and passing the written and practical competency tests is enough preparation to teach shop.			
Strongly Disagree	18	39	57
	(16.8)	(21.7)	(19.9)
Disagree	41	68	109
	(38.3)	(37.8)	(38.0)
Neither Agree Nor Disagree	19	22	41
	(17.8)	(12.2)	(14.3)
Agree	16	37	53
	(15.0)	(20.6)	(18.5)
Strongly Agree	13	14	27
	(12.1)	(7.8)	(9.4)
TOTAL	107	180	287
	(37.3)	(62.7)	(100.0)
How important or necessary is teacher training coursework to insure high quality instruction in the shop?			
Not at All	10	10	20
	(10.6)	(5.3)	(7.1)
Somewhat	26	65	91
	(27.7)	(34.4)	(32.2)
A Great Deal	58	114	172
	(61.7)	(60.3)	(60.8)
TOTAL	94	189	283
	(33.2)	(66.8)	(100.0)
The courses I have taken for vocational teacher approval have provided me with a better idea of how to teach.			
Strongly Disagree	3	9	12
	(4.1)	(4.7)	(4.5)
Disagree	2	16	18
	(2.7)	(8.3)	(6.8)
Neither Agree Nor Disagree	12	28	40
	(16.4)	(14.6)	(15.1)
Agree	33	94	127
	(45.2)	(49.0)	(47.9)
Strongly Agree	23	45	68
	(31.5)	(23.4)	(25.7)
TOTAL	73	192	265
	(27.5)	(72.5)	(100.0)

*The number of valid responses to each question is reported. Percentages are given in parentheses.

perceived need for, or the value of, teacher training. The questions asked about the value of training from opposite viewpoints:

1. "Having 6 years trade experience and passing the written and practical competency tests is enough preparation to teach shop." (agree-disagree scale)
2. "How important or necessary is teacher training coursework to insure high quality instruction in the shop?" (degree scale)

There was little or no difference in the way provisionally and fully approved teachers responded to these questions. Overall, 60.8% of teachers responding to the second question felt "a great deal" that teacher training is important to high quality shop instruction, and 57.9% disagreed or strongly disagreed that trade experience and competency is enough preparation to teach shop.

The last question in this set asked teachers to agree or disagree with the statement, "The courses I have taken for vocational teacher approval have provided me with a better idea of how to teach." One-quarter of teachers overall strongly agreed and 47.9% agreed that the required courses have provided them with a better idea of how to teach. A significant proportion of respondents, however (11.3%), disagreed or strongly disagreed with the statement. Of those who disagreed overall, fully approved teachers were twice as likely as provisionally approved teachers to express dissatisfaction with the teacher training coursework (13.0% vs. 6.8%, respectively).

Finally, vocational educators across the state were asked what the colleges could do to improve vocational teacher training in Massachusetts. Over 90% of those responding to this question made at least one suggestion for how the colleges could improve their training (Table 20). Of these suggestions, approximately one quarter mentioned a specific content area or specific teaching technique that is needed, such as the opportunity be made available for practice teaching. Approximately 41% of respondents felt that colleges could best improve through insuring the quality of the teacher training they offer through self-monitoring and by increasing the rigor of their course and program requirements. Thirty-seven percent felt that more support should be available to the teachers taking courses or that the colleges should do more in terms of outreach and recruitment. Approximately 16% of the suggestions were on the teachers' need for more instruction in their trade or shop area or in related subject matter.

Table 20

HOW COULD COLLEGES IMPROVE TEACHER TRAINING

Interview: "What could the colleges do that they are not doing now to make better vocational teachers."*

Type of Improvement Mentioned	Number of Times Mentioned	Percent of Responses**
A specific content area or teaching technique given.	20	16.4%
Opportunity for practice teaching	12	9.8%
Ensure quality teacher training, more rigorous program, monitoring	28	23.0%
More emphasis on the trades, and related subjects	20	16.4%
More supports for trainees, and more outreach	25	20.5%
Other comments or suggestions	17	13.9%
TOTAL RESPONSES =	122	100.0%
Number of cases with suggestions =	68 (90.7%)	
Number of cases responding "nothing," i.e., the colleges need no improvement =	7 (9.3%)	
TOTAL VALID CASES =	75 (100%)	

*Up to three open-ended responses were coded per respondent, therefore the number of responses (122) equals 179% of the number of cases (68) giving those responses.

**The percent of total suggestions for improvement given by respondents is reported.

D. The Approval Process and Issues Affecting Vocational Teacher Training in Massachusetts

1. Assessments of the Approval Process from the Surveys

The surveys of teachers and other vocational educators in the state asked respondents to assess the success and the appropriateness of the approval process in selecting, training, and maintaining high quality teachers and instruction in vocational schools and programs in Massachusetts. Questions addressed the approval process as a whole and also addressed each of the following four components or steps in the process:

- Time Working in Trade;
- Written and Practical Competency Tests;
- Teacher Training; and
- Professional Improvement

Vocational educators were asked in the interviews: "Do you feel that these requirements, taken together, are effectively selecting the best potential vocational teachers?" Respondents were fairly evenly divided with 42.5% of the respondents saying "yes", 48.8% saying "no", and 8.8% responding "it depends." (Table 21). As a follow-up question, respondents were asked if they could suggest any alternative or additional requirements for vocational teachers as part of the approval process. Over half the comments in response to this question, (56.4%) addressed the need for more or improved teacher training, or the need for a student teaching requirement. Other concerns about the process focused on tightening the credentialing process overall (11.3%), improving the trade competency of teachers by requiring more trade years or improved testing (8.4%), and increasing the flexibility within the approval requirements (7.0%).

The questionaire asked teachers about their experiences with the approval process. The majority of teachers did not feel they had any difficulty getting through the vocational teacher approval process (Table 22). Of the provisionally approved teachers responding to the questionaire, who are still going through the approval process, however, there was indication of somewhat more difficulty than fully approved teachers (15.9% versus 4.1%, respectively, agreeing that they had difficulty). Only 14.2% of respondents overall agreed with the statement "The documentation of prior work experience that is necessary for approval was difficult to obtain. " In response to whether or not information about the competency tests helped prepare them to take the tests, 43.5% of teachers with full approval and 58.4% with provisional approval disagreed or strongly disagreed that information about the tests helped to prepare them.

Another issue about the competency tests addressed in the questionaire was to what extent travel to the test sites in the respondents trade areas was a problem. For both the written and the practical examinations, between 20% and 25% of all teachers indicated that travel to the test sites was "a great deal" of a problem to them. Another 33% to 44% indicated that travel was "Somewhat of

Table 21

SUCCESS OF APPROVAL PROCESS OVERALL

Interviews:	Yes	No	Depends	Total
1. Do you feel that these requirements, taken together, are effectively selecting the best potential vocational teachers?	34 (42.5)	39 (48.8)	7 (8.8)	80
2a. Are there any alternative or additional requirements you might suggest for vocational teachers as part of the approval process?	61 (73.5)	19 (22.9)	3 (3.6)	83

2b. Comments:	Number	Percent
More trade experience, or better testing	6	8.4%
More or better training, or add student teaching	40	56.4%
More professional improvement	2	2.8%
Tighten credentialing	8	11.3%
More flexibility	5	7.0%
Process is fine as it is	8	11.3%
Other	2	2.8%
TOTAL =	71	100.0%

a problem," and between 32% and 45% felt that travel to the tests was "not at all a problem." For both examinations, teachers with provisional approval indicated more of a problem with travel than did teachers with full approval.

Teachers were also asked to agree or disagree with the statement "Taking the required coursework has posed a financial burden for me." Of those with provisional approval, 39.8% agreed or strongly agreed, and 28.8% of those with full approval agreed or strongly agreed with this statement. (Table 23). The provisionally approved teachers were equally split between those who felt the coursework was a financial burden and those who felt it was not. Fully approved teachers were slightly more likely to recall that the coursework did not pose a financial burden to them, (48.9% and 28.8% respectively disagreeing and agreeing with the statement.)

Table 22

TEACHER EXPERIENCE WITH THE APPROVAL PROCESS

Questionnaire:	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Total
I had difficulty getting through the vocational teacher approval process.						
Provisional	17*	54	14	11	5	101
	(16.8)	(53.5)	(13.9)	(10.9)	(5.0)	(34.5)
Full	55	115	14	6	2	192
	(28.6)	(59.9)	(7.3)	(3.1)	(1.0)	(65.5)
Total	72	169	28	17	7	293
	(24.6)	(57.7)	(9.6)	(5.8)	(2.4)	(100.0)
The documentation of prior work experience that is necessary for approval was difficult to obtain.						
Provisional	24	57	8	17	2	108
	(22.2)	(52.8)	(7.4)	(15.7)	(1.9)	(36.7)
Full	52	95	16	19	4	186
	(28.0)	(51.1)	(8.6)	(10.2)	(2.2)	(63.3)
Total	76	152	24	36	6	294
	(25.9)	(51.7)	(8.2)	(12.2)	(2.0)	(100.0)
Information about the competency tests helped prepare me to take them.						
Provisional	14	38	14	20	3	89
	(15.7)	(42.7)	(15.7)	(22.5)	(3.4)	(38.0)
Full	24	39	36	43	3	145
	(16.6)	(26.9)	(24.8)	(29.7)	(2.1)	(62.0)
Total	38	77	50	63	6	234
	(16.2)	(32.9)	(21.4)	(26.9)	(2.6)	(100.0)

To what extent was travel to the sites for the competency tests in your trade area a problem?	Not At All	Somewhat	A Great Deal	Total
a. For the written exam?				
Provisional	33	41	19	93
	(35.5)	(44.1)	(20.4)	(36.6)
Full	70	55	36	161
	(43.5)	(34.2)	(22.4)	(63.4)
Total	103	96	55	254
	(40.6)	(37.8)	(21.7)	(100.0)
b. For the practical exam?				
Provisional	30	41	24	95
	(31.6)	(43.2)	(25.3)	(38.0)
Full	70	51	34	155
	(45.2)	(32.9)	(21.9)	(62.0)
Total	100	92	58	250
	(40.0)	(36.8)	(23.2)	(100.0)

*The number of valid responses to each question is reported. Percentages are given in parentheses.

Table 23

TEACHER EXPERIENCES WITH APPROVAL COURSEWORK AND PROFESSIONAL DEVELOPMENT

Questionnaire:

Taking the required coursework has posed a financial burden for me.	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Total
Provisional	5 (5.4)	32 (34.4)	19 (20.4)	28 (30.1)	9 (9.7)	93 (33.1)
Full	22 (11.7)	70 (37.2)	42 (22.3)	46 (24.5)	8 (4.3)	188 (66.9)
Total	27 (9.6)	102 (36.3)	61 (21.7)	74 (26.3)	17 (6.0)	281 (100.0)

For the 60 required hours of annual professional improvement, about what percent of the time do you devote to keeping up with your trade and about what percent of the time do you devote to improving your teaching skills?

	Trade Skills	Cumulative Percent	Teaching Skills	Cumulative Percent
No Time	12 (4.9)	4.9%	35 (14.5)	14.5%
1 to 25 percent	16 (6.6)	11.5%	57 (23.6)	38.0%
25 to 50 percent	84 (34.4)	45.9%	100 (41.3)	79.3%
51 to 75 percent	63 (25.8)	71.7%	34 (14.0)	93.4%
76 to 99 percent	36 (14.8)	86.5%	8 (3.3)	96.7%
100 percent of time	33 (13.5)	100.0%	8 (3.3)	100.0%
	244 (100.0)		242 (100.0)	

In what ways do you fulfill the 60 required hours of annual professional improvement?

	Number**	Percent of Responses
Fitchburg State College Professional Improvement Conference	60	8.9%
Working in trade when not teaching	192	28.5%
Further Coursework	116	17.2%
Inservice Training Days	76	11.3%
Participation in Cooperative Education Programs	40	5.9%
Other Workshops/Seminars	104	15.4%
Trade Advisory Committee Meetings	65	9.6%
Other Activities	21	3.1%
Total Responses =	674	100.0%

Number of valid cases = 257

Total responses as a percent of valid cases = 262.3%

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*The number of valid responses to each item is reported. Percentages are given in parentheses.

**Respondents were allowed to select as many of these activities as applied to them; therefore some respondents indicated several activities and others indicated only one or a few, yield 674 responses from 257 respondents.

The questionnaire included two items on how teachers fulfill their professional improvement approval requirement. The first question asked what percent of their total professional improvement hours do respondents spend on trade skills versus teaching skills. Respondents overall tend to emphasize trade skills over teaching skills. Slightly more than half (54.1%) of the teachers report spending more than 50% of their time on trade improvement skills, versus 20.6% on teachers who report spending more than half their time on teaching improvement skills. Respondents were then asked to select from a list the kinds of activities they do to fulfill the professional improvement requirement. Consistent with the response distribution to the previous question, the largest percent of all activities indicated by respondents was for "working in trade when not teaching" (28.5%). Following in order of the next most frequently indicated professional improvement activity were "further coursework" (17.2% of all responses), "other workshops and seminars" (15.4%), "inservice training days" (11.3%), "trade advisory committee meetings" (9.6%), the Fitchburg Conference (8.9%), "participation in cooperative education programs" (5.9%), and other activities (3.1%).

Vocational educators in the state were asked in the interview if they felt that requirements for vocational teacher training in Massachusetts should be more rigorous, less rigorous, or if it is just about right. A small percentage of respondents feel that the requirements should be less rigorous (8.9%) because they discourage potential teachers (Table 24). The majority of interview respondents were equally split between feeling that the requirements are about right (42.7%) and that they should be more rigorous (41.3%). There is some concern that more rigor would be implemented as more academic work when it is more practical training that is needed.

The interviews also asked vocational educators for the approval requirement they felt is the most important, and the one which is least important, for vocational teachers to satisfy. For the most important requirement, the consensus among interviewees favors years in trade at 56.0% of total responses (Table 25). Years in trade was followed by teacher training with 14.3%. Competency testing received only 7.1% of the "vote" as most important, and 3.6% of interviewees chose professional improvement. Nineteen percent of those interviewed could not choose a requirement as most important, responding that they are all equally important.

In response to the question about which requirement is least important, more respondents (30.7%) were unwilling to make a choice, responding that the requirements are equally important. In general, those interviewed were less willing or able to select a least important requirement, but there was a tendency to select professional improvement or teacher training rather than the trade requirements of competency testing and years of experience.

The questionnaire asked teachers how important or necessary are each of the approval requirements to insure high quality instruction in the shop. The response distribution of the teachers was again consistent with that of other vocational educators in the state. The majority of teachers place "a great deal" of importance on each of the requirements. Practical

Table 24

DEGREE OF RIGOR IN TEACHER TRAINING REQUIREMENTS

Interview:

"Do you feel that requirements for vocational teacher training in Massachusetts should be more rigorous or less rigorous or do you feel they are just about right?"

	Number	Percent
More Rigorous	31	41.3%
About Right Now	32	42.7%
Less Rigorous	6	8.0%
Other Comment	6	8.0%
Total =	75	100.0%

Comments:

	Number	Percent
Revise present teacher training courses; more practical coursework; more like old T.T.1 and T.T.2	14	25.0%
Maintain, broaden, or increase trade years of knowledge; better trade testing	11	19.6%
Add practice teaching, more courses, or require a degree at some point	12	21.4%
Training is good now	7	12.5%
More rigor would be bad, would be too academic, would discourage potential teachers	5	8.9%
Need better screening throughout and after approval process	4	7.1%
Other comments	3	5.4%
Total =	56	100.0%

Table 25

IMPORTANCE OF APPROVAL REQUIREMENTS

Interviews:

1. Of the approval requirements, (1) documentation of the six years in trade; (2) passing both written and practical competency tests in their trade; (3) completing required teacher-training coursework; and (4) performing at least 60 hours of approved professional improvement activities every year:

	Trade	Tests	Training	Professional Improvement	All Equal	Total
a) Which requirement do you think is the most important for vocational teachers to satisfy?	47* (56.0)	6 (7.1)	12 (14.3)	3 (3.6)	16 (19.0)	84
b) Which requirement do you think is the least important for vocational teachers to satisfy?	6 (8.0)	12 (16.0)	15 (20.0)	19 (25.3)	23 (30.7)	75

*The number of valid responses to each item is reported. Percentages are given in parentheses.

competency testing and years in trade are viewed as relatively much more important or necessary (Table 26). In terms of the difficulty of each of the requirements for teachers to satisfy for approval, teacher training was felt to be somewhat more difficult than the others, although even for teacher training, half the respondents felt it to be "not at all" difficult.

Table 26

THE IMPORTANCE AND THE DIFFICULTY OF APPROVAL COMPONENTS

Questionnaire:				
How important or necessary is each of these vocational teacher requirements to insure high quality instruction in the shop?				
	Not At All	Somewhat	A Great Deal	Total
6 years trade experience	6*	17	284	307
	(2.0)	(5.5)	(92.5)	
Written competency test	22	79	177	278
	(7.9)	(28.4)	(63.7)	
Practical competency	16	50	210	276
	(5.8)	(18.1)	(76.1)	
Teacher training coursework	20	94	174	288
	(6.9)	(32.6)	(60.4)	
Professional improvement requirements	22	89	157	268
	(8.2)	(33.2)	(58.6)	
How difficult was each of these vocational teacher requirements to satisfy?				
6 years trade experience	272*	24	4	300
	(90.7)	(8.0)	(1.3)	
Written competency test	179	65	15	259
	(69.1)	(25.1)	(5.8)	
Practical competency test	191	52	14	257
	(74.3)	(20.2)	(5.5)	
Teacher training coursework	136	107	23	266
	(51.1)	(40.2)	(8.7)	
Professional improvement requirements	146	66	10	222
	(65.8)	(29.7)	(4.5)	

*The number of valid responses is reported for each item. Percentages are given in parentheses.

2. Information about the Approval Process

Table 27-A presents a series of responses from the questionnaire on how respondents first found out about the process of becoming a vocational teacher and the way in which information about the process is made known or is perceived. The first two questions are very similar, but tap subtle differences:

> "How did you first find out about how to become a vocational teacher?"
>
> "How did you first find out about the requirements for vocational teacher approval?"

The response distributions to both these questions demonstrate the significant role played by teachers and administrators in local vocational schools and programs in recruiting potential new teachers and in the dissemination of information about the approval process. Taken together, 55.3% of respondents report they first found out about how to become a vocational teacher from a vocational teacher or administrator, and 47.8% report that this was also how they found out about the requirements for approval. For these two questions respectively, 15.8% and 4.8% of respondents reported obtaining information from a fellow tradesperson or from their union. College personnel were the source of information for 7.4% and 9.9% of respondents, respectively for these two questions. Only 6.1% of respondents reported that they first found out about how to become a vocational teacher from the Department of Education, but 32.4% reported that the Department of Education was how they first found out about the approval requirements. The apparently smaller role (6.1%) played by the department in recruitment as reflected in the response to the first question may be attributable to real differences in the way information is obtained about vocational teaching, but the differences (6.1% vs. 32.4%) may also be artificially inflated because "the department of education" was not printed on the questionnnaire as a response category to the first question and had to be, therefore, written in as a response. The 6.1% for the first question is probably an underestimation of the department's role in recruitment. The conclusion to be drawn from these two questions is the relatively large role in recruitment and information dissemination played by teachers and administrators in the local vocational schools and programs across the state (approximately half of all respondents citing them as their original source of information).

In terms of finding out about specific requirements, 58.1% of respondents reported they first found out about what courses are required for approval from the department of education, 18.7% reported they found out about required courses from college staff or literature, and 19.7% reported first finding out about courses from a vocational teacher or administrator (Table 27-A). In terms of who approved the courses respondents have taken for vocational teacher approval, 77.7% reported it was the department of education, 10.7% indicated a college representative, and 10.3% indicated it was a vocational school administrator. The responses to this set of questions indicate overall the high recognition among questionnaire respondents of the role of local

Table 27-A

INFORMATION ABOUT THE APPROVAL PROCESS

Questionnaire:	Number	Percent
How did you first find out about how to become a vocational teacher?		
Vocational School Teachers	99	31.8%
Vocational School Administrators	73	23.5%
Fellow Tradesperson	49	15.8%
College Personnel	23	7.4%
Newspaper Ad	21	6.8%
Department of Education	19	6.1%
Other or a combination of ways	27	8.7%
TOTAL =	311	100.0%
How did you first find out about the requirements for vocational teacher approval?		
From the Department of Education (central or regional office)	101	32.4%
From a Vocational Teacher	77	24.7%
From a Vocational School Administrator	72	23.1%
From a College	31	9.9%
From my union or others in my trade	15	4.8%
Other or a combination of ways	16	5.1%
TOTAL =	312	100.0%
How did you first find out what courses are required for vocational teacher approval?		
Department of Education (central or regional office representative)	180	58.1%
College staff or brochure	58	18.7%
Vocational School Teacher or other staff member	61	19.7%
Other	11	3.5%
TOTAL =	310	100.0%
Who approved the courses you have taken?		
Department of Education		
·Central Office	155	69.2%
·Regional Office	19	8.5%
Vocational School Administrator	23	10.3%
College Representative	24	10.7%
Other	3	1.3%
TOTAL	224	100.0%

vocational school or program teachers and administrators, in conjunction with the department of education, in recruitment of vocational teachers through the availability and dissemination of information about the vocational teacher approval process. The colleges and trades or unions are the next most likely source of recruitment and information depending on one's trade area and one's progression through the process.

Another set of items on the teacher questionnaire sought to find out when most respondents learned about approval requirements and how they progressed through the process. Table 27-B shows a fairly consistent pattern of the way in which respondents learn about and complete the process. Half the teachers (51.6%) felt they clearly knew the requirements for approval when they first started the process, and another 37.3% felt they knew the requirements "to some extent." Almost two-thirds (64.3%) of respondents reported knowing the requirements before they took the competency tests, and in response to another question, 37.9% reported they began taking the required teacher training courses before they took the competency tests.

3. Recruitment of Vocational Teachers

Closely related to how one finds out about the approval process is the more general issue of the recruitment of new vocational teachers and filling available teaching slots with approved teachers. Vocational educators across the state were asked in the interview if they were aware of problems in filling instructional positions and of the extent of those problems. Almost all of those responding to the question (89.1%) were aware of problems, but generally they do not frequently find approved teachers who are not available to take positions offered them (Table 28). Thirty percent of respondents frequently find teachers who are unavailable, another 28.0% find this a problem "sometimes," but 42.0% only find this to be a problem "seldom" or "never."

The most common reason (73.2%) cited by interviewees for why approved teachers do not accept teaching positions offered to them is that they have better opportunities, money, or benefits in industry. The next most common reason cited by respondents (17.1%) is that the teaching position is too far away to commute every day. Also mentioned as problems were that the teacher is already employed (7.3%) and that the list from the Office of Professional Development of approved teachers is inaccurate. The interview also asked vocational educators for their suggestions on "What might be some good methods for recruiting teachers in the areas where they are needed most?"

Approximately one-third (35.7%) of respondents suggested that better pay and benefits would help to attract vocational teachers in trade areas with high demand. Another 28.6% cited the need for more information, public relations, and advertising about vocational teaching as a career option, and 14.3% suggested a system of cooperative exchange with industry to fill teaching positions.

Table 27-B

INFORMATION ABOUT THE APPROVAL PROCESS

Questionnaire:	Number	Percent
Did you clearly know what the requirements for vocational teacher approval were when you started the process, i.e., before you took the competency tests?		
Yes, very clearly	159	51.6%
To some extent	115	37.3%
Had no idea	34	11.0%
TOTAL =	308	100.0%
When did you first find out what the requirments are for approval as a vocational teacher?		
Before I took the competency tests.	196	64.3%
After I took the competency tests.	45	14.8%
After I had already started to take courses.	29	9.5%
After I started to teach.	11	3.6%
Other.	24	7.9%
TOTAL	305	100.0%
Did you begin taking the required teacher-training courses before you took the competency tests?		
Yes	116	37.9%
No	190	62.1%
TOTAL =	306	100.0%

Table 28

TEACHER SHORTAGES AND RECRUITMENT

Interviews:

	Yes	No	Total
Have you had or have you heard about problems in filling instructional positions?	57* (89.1)	7 (10.9)	64

	Frequently	Some-times	Seldom	Never	Total
How often do you find approved vocational teachers who are not available to take the positions offered them?	15 (30.0)	14 (28.0)	10 (20.0)	11 (22.0)	50

	Better Opportunity	Too Far Away	Already Employed	Problems With List	Total
What reasons do these approved teachers give for not accepting teaching positions?	30 (73.2)	7 (17.1)	3 (7.3)	1 (2.4)	41

	Better Pay And Benefits	More Infor-mation	Exchange With Industry	Other	Total
What might be some good methods for recruiting teachers in the areas where they are needed most?	20 (35.7)	16 (28.6)	8 (14.3)	12 (21.4)	56

*The valid number of responses is reported. Percentages are given in parentheses.

4. The Role and Status of Vocational Teachers

The survey of approved vocational teachers asked several questions on how respondents see themselves as vocational teachers and on their transition from working full-time in a trade to working full-time as a teacher. Respondents were asked to select from a list of possible choices what was the most important reason they became a vocational teacher. The desire to teach was the single most important reason for 58.7% of the respondents, and another 21.3% cited professional growth (Table 29). The remaining 20.0% of respondents chose two or more reasons or gave a reason not listed.

In response to the statement, "My decision to become a vocational teacher has been a good one," 69.8% of the teachers agreed or strongly agreed. One-quarter of the respondents felt they could "neither agree nor disagree" with the statement, but only 5.3% disagreed that becoming a vocational teacher was a good decision. Another item which partially taps the respondents' satisfaction with vocational teaching was the statement, "It is likely that in 5 years I will be a vocational teacher." Keeping in mind that many questionnaire respondents were not teaching at this time, half of the respondents (49.6%) agreed or strongly agreed with the statement.

Another set of questions asked teachers to compare their status as a vocational teacher versus their status as a tradesperson (Table 30). Almost two-thirds of the respondents (65.1%) disagreed with the statement, "I have had a tough time adjusting from being a tradesperson to being a vocational teacher," however 57.4% of respondents agreed that teaching is a lot more demanding than they thought it would be. Respondents were asked to compare vocational teachers to other teachers in general. Just over half (52.3%) disagreed or strongly disagreed that the two are not much different, compared to 32.8% of respondents who agreed to some extent that vocational teachers are not much different.

The issue of job security, pay, and benefits arises frequently in any discussion comparing vocational teaching with working in a trade. The majority of respondents to the questionnaire (62.7%) do not feel that they have better job security as a vocational teacher than they have working in their trade. The majority of respondents (64.3%) also feel that generally they will be financially worse off as a vocational teacher than if they were to have remained in their trade.

Overall however, the negative aspects to vocational teaching versus working in a trade are outweighed for the most part by the positive aspects of teaching such as a person's desire to teach. The ambivalence expressed by many over the differential positions of tradesperson versus teacher may be an irresoluble issue stemming from the centrality of trade in vocational teaching and from the transition to teacher from full-time tradesperson. The "proper balance" between trade proficiency and teaching proficiency may be easily lost unless there are systematic checks in place.

Table 29

ROLE OF THE VOCATIONAL TEACHER

Questionnaire:	Desire to Teach	Professional Growth	Combination of Reasons or Other	Total
What was the most important reason you became a vocational teacher? (Money, Job Security, Desire to Teach, Professional Growth, Easier Job, Job Less Physically Demanding, or Other)	179* (58.7)	65 (21.3)	61 (20.0)	305

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Total
My decision to become a vocational teacher has been a good one.	5 (1.9)	9 (3.4)	65 (24.8)	123 (46.9)	60 (22.9)	262
It is likely that in 5 years I will be a vocational teacher.	31 (11.0)	33 (11.7)	78 (27.7)	103 (36.5)	37 (13.1)	282

*The number of valid responses to each question is reported. Percentages are given in parentheses.

Table 30

STATUS OF THE VOCATIONAL TEACHER

Questionnaire:	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Total
I have had a tough time adjusting from being a trades person to being a vocational teacher.	60* (25.9)	91 (39.2)	47 (20.3)	26 (11.2)	8 (3.4)	232
Teaching vocational school is a lot more demanding than I thought it would be.	8 (3.3)	40 (16.5)	55 (22.7)	90 (37.2)	49 (20.2)	242
Vocational teachers are not much different than teachers in general.	56 (18.2)	105 (34.1)	46 (14.9)	88 (28.6)	13 (4.2)	308
I have better job security as a vocational teacher than I have working in my trade.	83 (31.0)	85 (31.7)	63 (23.5)	28 (10.4)	9 (3.4)	268
Overall, I will be financially no worse off as a vocational teacher than if I remained in the trade.	95 (32.3)	94 (32.0)	44 (15.0)	55 (18.7)	6 (2.0)	294

*The number of valid responses to each question is reported. Percentages are given in parentheses.

Vocational educators were asked in the interview, "Do you think of vocational teachers as tradespeople first or as teachers first?" Approximately fifteen percent (15.2%) of those responding said they are equally tradespeople and teachers (Table 31). The remaining majority of respondents, 84.8%, were almost evenly split: 44.3% felt they are tradespeople first and 40.5% felt they are teachers first.

The interview also asked vocational educators what they see as the major differences between shop teachers and academic teachers. There was a broad range of responses. Some of those interviewed, 18.2%, noted that shop and academic teachers have different philosophies of teaching. Several respondents (37.7%) felt that shop teachers are better teachers than are the academics, approximately half of these seeing shop teachers as realists and and more practical, and the other half seeing shop teachers as more dedicated, as handling students better as individuals, and as being more conscious of themselves as role models for their students. A minority of respondents (8.8%) feel that academic teachers are the better teachers, that they are more involved in their school, and that they emphasize further education. Another few respondents (6.5%) stated that shop teachers are more interested in the ends than in the means of teaching. Almost thirty percent of respondents (29.9%) noted other types of differences between shop and academic teachers.

5. The Goal of Vocational Education and Changes in Vocational Education

What teachers perceive as the goal of vocational education may affect what they see as their role and status as vocational teachers. Almost every respondent to the questionnaire mentioned as a goal preparing students for a trade and the world of work (Table 32). In addition, several other goals were stated. One-quarter of all responses to this question (25.7%) named as a goal developing the student's character, attitudes, and values, making them better citizens, or preparing them for the "real" or adult world. Another 11.2% of all goals given was meeting the general educational needs of students, such as in reading, writing, or mathematics, or in a broader way such as teaching various "life skills." Some respondents (6.2% of all responses) focused the goal away from the student and towards the needs of the society or community at large. Specifically these goals mentioned the general community good or providing the society with a trained work force, with more taxpaying citizens, or with more types of work opportunities.

Table 33 presents the responses of vocational educators in the interviews to questions on recent changes in vocational education. As was found from other items on both the questionnaire and the interview guide on how various issues have affected teacher training, the issue, of those presented, which has affected vocational education the most in recent years is special education. For the other issues, bilingual and affirmative action, the changes perceived by respondents are less pervasive: 86.2% responded "yes" they have seen changes in vocational education issues, 56.1% responded "yes" with respect to affirmative action, and 45.2% saw changes with respect to bilingual issues.

A more global question asked of vocational educators was "Do teachers do things differently in vocational classes today than they would have done

Table 31

ROLE AND DEFINITION OF THE VOCATIONAL TEACHER

Interviews:	Number	Percent
Do you think of vocational teachers as tradespeople first or as teachers first?		
Tradespeople First	35	44.3%
Teachers First	32	40.5%
Both Equally	12	15.2%
TOTAL	79	100.0%
What do you see as the major differences between shop teachers and academic teachers?		
They have different philosophies of teaching	14	18.2%
Shop teachers are realists, are more practical	14	18.2%
Shop teachers are more dedicated; individualize instruction more; handle students better, conscious of being a role model	15	19.5%
Academics are better teachers; more involved in schools; emphasize further education	6	8.8%
Shop teachers are more interested in the ends than the means	5	6.5%
Other differences	23	29.9%
TOTAL	77	100.0%

Table 32

GOALS OF VOCATIONAL EDUCATION

Questionnaire:

"What should be the most important goals of vocational education?"

	Number	Percent of Responses
Prepare for a trade and the world of work	333*	55.8%
Develop the student's character and values; make them better citizens; prepare them for the "real" world	153	25.7%
General education for the student	67	11.2%
General societal good; trained workforce, taxpayers; opportunities for work	37	6.2%
Other goals	6	1.0%
TOTAL RESPONSES =	596	100.0%

Number of valid cases = 260

Percent of responses as a percent of number of cases = 229.2%

*Up to three responses were coded for each respondent to this question, therefore the total number of responses (596) is greater than the number of cases (260).

Table 33

ISSUES AFFECTING VOCATIONAL EDUCATION

Interviews: "Do you see any changes in vocational education in response to concerns about:

	Yes	No	Depends or Other	Total Valid Responses
Bilingual Issues	33* (45.2)	26 (35.6)	14 (19.1)	73
Special Education Issues	69 (86.2)	6 (7.5)	5 (6.2)	80
Affirmative Action Issues	46 (56.1)	22 (26.8)	14 (17.1)	82
"Do teachers do things differently in vocational classes today than they would have done ten years ago?"	44 (61.1)	26 (36.1)	2 (2.8)	72

Comment:	Number	Percent
Positive changes; more up-to-date, more aware of individual differences	26	46.4%
No change or a minor change	15	26.8%
Negative changes; more lax now	15	26.8%
	56	100.0%

*The number of valid responses is reported. Percentages are given in parentheses.

ten years ago?" The majority of respondents (61.1%) said "yes." In explaining their response, 46.4% of the vocational educators have seen general positive changes in the last ten years, such as teachers being more up-to-date and more aware of individual student differences. Slightly more than one-quarter (26.8%) have seen no change or only minor changes in the way teachers do things in vocational classes, and another 26.8% feel there have been negative changes in the last ten years.

6. Coordination and Role of Groups in the Approval Process

Vocational educators across the state were interviewed also on the degree of coordination and the role of the several groups of vocational educators in the vocational teacher approval process. The interview respondents are representative, at least in part, of each of these relevant parties, i.e., the department of education, the colleges, the vocational schools or programs, and the vocational education community at large. The majority of those interviewed (70.1%) are either dissatisfied or somewhat dissatisfied with the level of coordination between these groups (Table 34). It was also felt that each of the groups holds some of the responsibility for the general dissatisfaction with the level of coordination between them.

Contributing to the degree of coordination among groups in any system is the clear definition of roles and responsibilities. In the interviews vocational educators were asked what they thought should be the role in the approval process of the department of education, the colleges, the secondary vocational schools, and fully approved and experienced vocational teachers. Table 35 presents the array of responses for each of the groups. The department of education's role is seen as generally administrative for the process as a whole, including setting and enforcing criteria for approval and ensuring an adequate supply of quality vocational teachers. The colleges' role is seen mostly as ensuring high quality, up-to-date teacher training and counseling. This includes documenting teacher competency. The colleges are also seen by many vocational educators as having a particular responsibility for the degree of coordination in the approval process.

The staff of secondary vocational schools and programs, both administrators and fully approved teachers, are seen as having mostly an advisory role in the process, although contributing in several ways throughout the process. In essence, it is felt they should have an adjunct role in the process, in such ways as monitoring, testing, and training on the part of school administrators, and in supervising new teachers and in input into the trade competency tests on the part of vocational teachers.

7. The Coordination and Role of the Department of Education and the Management of Information

The successful administration and coordination of any system depends a great deal on the successfull management of information. One of the roles of the Office of Professional Development is the administration of vocational teacher approval and the responsibility of ensuring an adequate pool of

Table 34

COORDINATION OF GROUPS IN THE APPROVAL PROCESS

Interviews:

The vocational teacher training component of the approval process requires coordination between the Department which requires certain courses, the colleges which present those courses, and the vocational schools where that coursework is utilized.

	Number	Percent
At this time, do you think that the level of coordination between these groups is satisfactory?		
Yes	20	29.9%
No	39	58.2%
Depends or Other	8	11.9%
TOTAL	67	100.0%

Table 35

ROLE OF GROUPS IN THE APPROVAL PROCESS

Interviews: What do you think should be the role in the approval process of:	Number	Percent of Responses
The Department of Education:		
Set and enforce the criteria	39	30.5
An administrative role	30	23.4
Adequate supply of teachers	13	10.2
Monitor teacher quality	11	8.6
Coordinate core curriculum	7	5.5
What it is doing now	7	5.5
Other	21	16.4
TOTAL RESPONSES =	128	100.0%
Number of valid cases = 76		
Percent of responses as a percent of cases = 168.4%		
The Colleges:		
Up to date program	22	22.2%
Coordination role	18	18.2%
Document competency	15	15.2%
Quality teacher training and counseling	19	19.2%
Less of a role	9	9.1%
Other	16	16.2%
TOTAL RESPONSES =	99	100.0%
Number of valid cases = 70		
Percent of responses as a percent of cases = 141.4%		
The Secondary Vocational Schools:		
Advisory role	27	38.0%
Monitoring role	11	15.5%
Testing role	9	12.7%
Training role	7	9.9%
Other	17	23.8%
TOTAL RESPONSES =	71	100.0%
Fully Approved and Experienced Vocational Teachers:		
Advisory role	34	47.2%
Input to the competency tests	14	19.4%
Supervise new teachers	9	12.5%
Other	15	20.9%
TOTAL RESPONSES	72	100.0%

available vocational teachers for the commonwealth. Records must be created, maintained, and kept up-to-date for the pool of thousands of persons with either provisional or full approvals for Massachusetts and for the hundreds of persons who enter the approval process each year. A system of tracking should be in place in order to keep records complete and current and in order to purge out-dated and incorrect data. All this is necessary if the office is to successfully manage the pool of available vocational teachers in terms of trade areas, regions of the state, successful completion of approval requirements, availability status, and other relevant variables.

The Office of Professional Development presently maintains a comprehensive listing of those who obtain provisional and full approval as a vocational teacher in Massachusetts. The listing is revised each time a person obtains a new or additional approval status, and is maintained on a computer tape by the department. In the process of using this tape of those with vocational teacher approvals to draw the sample for the study mail survey, several weaknesses in the system for the archiving of approval data were discovered. Among these weaknesses are:

- inconsistent coding of information;
- purging valuable original information to accomodate new information;
- no systematic way to purge out-dated information from the file;
- no systematic way to keep all information up-to-date;
- valuable descriptive information is not entered into the file; and,
- access to the approval file is limited both in terms of bureaucracy and in the nature of the file structure itself.

Specifically, the tape of approvals was used to define the population of approved vocational teachers in Massachusetts. Our study sample was drawn from the names on the tape with teacher approval dates from 1975 to 1981. Persons with provisional approval were over-sampled, so that, overall, the sample drawn from the tape represents fairly recent data. Problems encountered with our sample in terms of currency and consistency of data would be magnified in a review of the entire computer file.

The mailing procedure used for the survey ensured that we would have the best available record of non-deliverable and forwarded questionnaires. Almost twenty percent (19.3%) of the mail questionnaires came back from post offices as undeliverable to the address obtained from the computer tape, and another 5.8% of the sample had changes of address forwarded to us.

In terms of outdated, inconsistent, or irrelevant information on the data tape, 5 questionnaires were returned to us with a note that the person was deceased (and some for several years), and 13 people did not complete the questionnaire because they never were vocational teachers, never obtained approval, because they started the process but never finished, or because they have been retired for several years.

Part of the process of drawing the sample was to select only those persons with teacher approvals, as the tape also files information on non-teaching vocational approvals. For the most part we were successful in selecting only those with teacher approvals (see the section on respondent demographics), but several of the codes have changed once or twice since 1975 and there is, as a result, some overlapping approval codes. Since the computer tape only stores the date of the most recent approval, the dates could not be used to sort out the discrepancies.

If the Office of Professional Development is to seriously monitor the pool of available vocational teachers in the state and to provide a central dissemination point for lists of available teachers to fill vacant instructional slots in vocational schools or programs, a more systematic, accessible, and up-to-date record of information is required. To accomplish this:

- an analysis of information needs would have to be conducted;
- old information reformatted, purged, or stored in a separate archive;
- a system for tracking individuals or for maintaining the currency of the file would have to be established, especially in terms of an "availability" status code; and,
- the office should have same-day or next-day capability to locate available, fully approved teachers when a vacancy becomes available in a school or program.

Access to current and comprehensive information would also facilitate the identification of problem areas which need attention. Trade areas or regions with a high demand for teachers, for instance, could be more easily targeted for aggressive outreach and recruitment, and limited resources could be more accurately and efficiently allocated.

APPENDIX A:

LISTING OF PROPOSED CLUSTERS

LOGOS PROPOSED CURRICULUM OF CLUSTERS OF TEACHING COMPETENCIES FOR VOCATIONAL EDUCATORS

I. Introduction to Teaching

(B-4) Develop a Lesson Plan;

(C-10) Introduce a Lesson;

(C-11) Summarize a Lesson;

(B-5) Select Student Instructional Materials;

(B-6) Prepare Teacher-Made Instructional Materials;

(C-16) Demonstrate a Manipulative Skill;

(C-17) Demonstrate a Concept or Principle;

(D-1) Establish Student Performance Criteria;

(D-2) Assess Student Performance Knowledge;

(D-4) Assess Student Performance Skills; and,

(D-5) Determine Student Grades.

II. Curriculum Planning and Development

(A-6) Develop Program Goals and Objectives;

(A-8) Develop a Course of Study;

(B-2) Develop Student Performance Objectives;

(B-3) Develop a Unit of Instruction;

(C-6) Guide Student Study;

(C-18) Individualize Instruction;

(C-7) Direct Student Laboratory Experience;

(C-14) Provide Instruction for Slower and More Capable Learners;

(C-19) Employ the Team Teaching Approach;

(E-1) Project Instructional Resource Needs; and,

(F-4) Provide Information on Educational and Career Opportunities.

III. Teaching Methods

(C-8) Direct Students in Applying Problem-Solving Techniques;

(C-12) Employ Oral Questioning Techniques;

(C13) Employ Reinforcement Techniques;

(C-15) Present an Illustrated Talk;

(C-2) Conduct Group Discussions, Panel Discussions, and Symposiums;

(continued)

III. Teaching Methods (continued)

(C-3) Employ Brainstorming, Buzz Group, and Question Box Techniques;
(C-5) Employ Simulation Techniques;
(C-22) Present Information with Models, Real Objects, and Flannel Boards;
(C-23) Present Information with Overhead and Opaque Materials;
(C-24) Present Information with Filmstrips and Slides;
(C-25) Present Information with Films;
(C-26) Present Information with Audio Recordings;
(C-20) Present Information with the Chalkboard and Flip Chart;
(C-4) Direct Students in Instructing Other Students;
(C-21) Prepare Bulletin Boards and Exhibits; and,
(C-1) Direct Field Trips.

IV. Instructional Management

(E-5) Provide for Student Safety;
(E-6) Provide for the First Aid Needs of Students;
(E-2) Manage Your Budgeting and Reporting Responsibilities;
(E-4) Maintain a Filing System;
(E-7) Assist Students in Developing Self-Discipline;
(E-8) Organize the Vocational Laboratory;
(E-9) Manage the Vocational Laboratory;
(C-9) Employ the Project Method; and,
(F-3) Use Conferences to Help Meet Student Needs.

V. Instructional Evaluation

(A-7) Conduct an Occupational Analysis;
(B-1) Determine Needs and Interests of Students;
(D-3) Assess Student Performance Attitudes;
(A-9) Develop Long Range Program Plans;
(F-1) Gather Student Data Using Formal Data Collection Techniques;
(F-2) Gather Student Data through Personal Contacts;
(A-11) Evaluate Your Vocational Program; and,
(D-6) Evaluate Your Instructional Effectiveness.

VI. Professional Responsibilities

(I-1) Keep Up-to-Date Professionally;

(I-3) Develop an Active Personal Philosophy of Education;

(I-2) Serve Your Teaching Profession;

(I-4) Serve the School and Community;

(A-4) Organize an Occupational Advisory Committee;

(A-5) Maintain an Occupational Advisory Committee;

(F-5) Assist Students in Applying for Employment or Further Education;

(J-1) Establish Guidelines for Your Cooperative Vocational Program;

(J-2) Manage the Attendance, Transfers, and Terminations of Co-Op Students;

(J-3) Enroll Students in Your Co-Op Program;

(J-4) Secure Training Stations for Your Co-Op Program;

(H-1) Develop a Personal Philosophy Concerning Student Vocational Organizations;

(G-1) Develop a School-Community Relations Plan for Your Vocational Program;

(G-7) Conduct an Open House; and,

(G-9) Work with State and Local Educators.

COMPETENCIES FOR ADVANCED STUDY FOR VOCATIONAL EDUCATORS

Category A: Program Planning, Development, and Evaluation:

-1 Prepare for a Community Survey;

-2 Conduct a Community Survey;

-3 Report the Findings of a Community Survey; and,

-10 Conduct a Student Follow-Up Study.

Category C: Instructional Execution:

-20 Use Subject Matter Experts to Present Information;

-27 Present Information with Televised and Videotaped Materials;

-28 Employ Programmed Instruction.

Category E: Instructional Management:

-3 Arrange for Improvement of Your Vocational Facilities.

Category G: School-Community Relations:

-2 Give Presentations to Promote Your Vocational Program;

-3 Develop Brochures to Promote Your Vocational Program;

-3 Prepare Displays to Promote Your Vocational Program;

-5 Prepare News Releases and Articles Concerning Your Vocational Program;

-8 Work with Members of the Community; and,

-10 Obtain Feedback about Your Vocational Program.

Category H: Student Vocational Organization:

-2 Establish a Student Vocational Organization;

-3 Prepare Student Vocational Organization Members for Leadership Roles;

-4 Assist Students in Developing and Financing a Yearly Program of Activities;

-5 Supervise Activities of the Student Vocational Organization;

-6 Guide Participation in Student Vocational Organization Contests.

Category I: Professional Role and Development:

-5 Obtain a Suitable Teaching Position;

-6 Provide Laboratory Experiences for Prospective Teachers;

-7 Plan the Student Teaching Experience; and,

-8 Supervise Student Teachers.

Category J: Coordination of Cooperative Education:

-5 Place Co-Op Students on the Job;

-6 Develop the Training Ability of On-the-Job Instructors;

-7 Coordinate On-the-Job Instruction;

-8 Evaluate Co-Op Students'On-the-Job Performance;

-9 Prepare for Students' Related Instruction; and,

-10 Supervise an Employer-Employee Appreciation Event.

APPENDIX B:
STUDY INTERVIEW GUIDE

VOCATIONAL TEACHER TRAINING PROJECT

Summer 1981

CONDUCTED BY: Logos Research Institutes, Inc.

CONDUCTED FOR: The Massachusetts Department of Education
Division of Occupational Education

Hello. I am ________________________________ from Logos Research Institutes in Amherst. We recently sent you a letter to introduce a state-wide study of vocational teacher training in Massachusetts. We are conducting this study for the Division of Occupational Education.

You have been selected as someone who has knowledge in many of the areas we will be looking at. You may have more first-hand knowledge in some areas than in others. But your experiences, ideas, and opinions are all valuable to this study. All your responses will be strictly confidential and in no way will an individual's answers be identified with that individual.

This interview involves various areas of the approval process for vocational teachers. The questions will fall into the broad categories of:

- The current status of vocational education and the laws, the social issues, and other trends affecting that status;
- The various steps of the approval process;
- The coursework offered at the various colleges; and
- The effectiveness of the approval process, especially the teacher training component.

The first thing we would like to talk about are the requirements which a vocational teacher must satisfy in order to get and to maintain full state approval. These requirements involve: (1) documentation of the six years in trade; (2) passing both written and practical competency tests in their trade; (3) completing required teacher-training coursework; and (4) satisfying the 60 hours of required professional improvement activities.

1. Of these approval requirements:

   a) Which requirement do you think is the most important for vocational teachers to satisfy?
   Trade ___ Tests ___ Training ___ P.I. ___ Non-Committal ___

   b) Why?

   ____

   ____

   c) Which requirement do you think is the least important for vocational teachers to satisfy?
   Trade ___ Tests ___ Training ___ P.I. ___ None ___

   d) Why?

   ____

   ____

2. Do you feel that these requirements, taken together, are effectively selecting the best potential vocational teachers? Yes ___ No ___

   a) Explain/Comment:

   ____

   ____

3. Are there any alternative or additional requirements you might suggest for vocational teachers as part of the approval process?
   Yes ___ No ___ Don't Know ___ Other ___

   a) Explain/Comment:

   ____

   ____

4. Do you think that the trade experience and the competency test requirements ensure that vocational instructors are adequately skilled in their trades?
   Yes ___ No ___ Don't Know ___ Other ___

   a) Explain/Comment:

   ____

   ____

● ● ●

(QUESTION 5 IS FOR SCHOOL ADMINISTRATORS ONLY)

5. How do you go about evaluating your teachers?
   On-site Observations ___ Student Evaluations ___ Other ___

   a) Explain/Comment:

   ____

   ____

b) What criteria do you use in evaluating your teachers?

c) What kind of instruments do you use to evaluate your teachers?

MAY I HAVE A COPY OF ANY TEACHER EVALUATION FORMS THAT YOU USE, TO TAKE WITH ME?

d) How often do you evaluate your teachers?

o o o

(IN THE NEXT FEW QUESTIONS I'D LIKE YOUR OPINIONS ABOUT THE TEACHER TRAINING REQUIREMENTS AND THE COURSES AT THE COLLEGES)

6. Do you think that vocational teachers receive enough training in terms of teaching skills to teach shop students?
   Yes ___ No ___ Don't Know ___ Other ___

   a) Explain/Comment:

7. Do you think there are any areas of teacher training which are not covered or are not covered in sufficient depth and should be included or expanded within the required coursework?
   Yes ___ No ___ Don't Know ___ Other ___

   a) Explain/Comment:

8. Do you think there are any areas of teacher training which are repetitive, irrelevant, or outdated and should be diminished or dropped from the required coursework?
   Yes ___ No ___ Don't Know ___ Other ___

   a) Explain/Comment:

9. Do you feel that vocational teachers are adequately prepared to design and to modify curriculum content?
Yes ___ No ___ Don't Know ___ Other ___

a) Explain/Comment:

____

____

10. Do you think that teacher training courses should be required for shop teachers before they are allowed to teach?
Yes ___ No ___ Don't Know ___ Other ____

a) Explain/Comment:

____

____

11. Do you think that vocational teachers need more coursework than the 18 credits which are presently required?
Yes ___ No ___ Don't Know ___ Other ___

a) Explain/Comment:

____

____

12. a) Should practice teaching be available as part of vocational teacher training at the college?
Yes ___ No ___ Don't Know ___ Other ___

b) Should practice teaching be required as part of vocational teacher training at the colleges?
Yes ___ No ___ Don't Know ___ Other ___

c) Explain/Comment:

____

____

13. What could the colleges do that they are not doing now to make better vocational teachers?

____

____

14. Do you see any changes in vocational education in response to concerns about:

a) Bilingual issues? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

b) Special education issues? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

c) Affirmative action issues? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

15. Do you believe the average vocational instructor is adequately prepared to deal with:

a) The typical shop student? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

b) The special education student? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

c) The bilingual student? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

d) The student in a course not traditionally identified with their sex?
Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

16. Should vocational teacher training place a greater emphasis on issues associated with:

a) Bilingual education? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

b) Special education? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

c) Sex equity? Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

d) The recruitment of minority populations for vocational teachers?
Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

17. Do you think of vocational teachers as trades people first or as teachers first?
Trades People ___ Teachers ___ Don't Know ___ Other ___

a) Explain/Comment:

18. Do teachers do things differently in vocational classes today than they would have done ten years ago?
Yes __ No ___ Don't Know ___ Other ___

a) Explain/Comment:.

19. What do you see as the major differences between shop teachers and academic teachers?

20. This question concerns various groups that take part in the vocational teacher approval process.

a) What do you think should be the role of the Department of Education in the approval process?

b) What do you think should be the role of the secondary vocational schools in the approval process?

____

____

c) What do you think should be the role of the colleges in the approval process?

____

____

d) What do you think should be the role of the fully approved experienced vocational instructors who teach in vocational schools in the approval process?

____

____

21. Do you see any differences in the quality of instructors among the five major program areas (T.+I., D.E., Vo-Ag, Health, Home Ec)?

Explain/Comment:

____

____

a) (IF YES) What differences in each specific area of the approval process might account for this?

____

____

22. Do you feel that requirements for vocational teacher training in Massachusetts should be more rigorous, less rigorous, or do you feel that they are just about right?
More ___ Less ___ All Right ___

a) Explain/Comment:

____

____

23. The vocational teacher training component of the approval process requires coordination between the Department of Education which requires certain courses, the colleges which present those courses, and the vocational schools where that coursework is utilized.

a) At this time, do you think that the level of coordination between these groups is satisfactory?
Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

b) What do you think could improve that coordination?

24. It is to all our advantages to have all our teachers current both in teaching methods and in their trade.

a) What do you feel is the most effective way for teachers to keep current in teaching methods?

b) What do you feel is the most effective way for teachers to keep current in their trade?

25. Do you feel that the current requirements for professional improvement are effective for keeping vocational teachers up to date?
Yes ___ No ___ Don't Know ___ Other ___

a) Explain/Comment:

NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT RECRUITING AND HIRING VOCATIONAL TEACHERS.

26. Have you had or have you heard about problems in filling instructional positions?

a) (IF VOCATIONAL SCHOOL)
Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

b) (IF IHE) Yes ___ No ___ Don't Know ___ Other ___

Explain:

27. How often do you find approved vocational teachers who are not available to take the positions offered them?
Frequently ___ Sometimes ___ Seldom ___ Not at All ___

Explain/Comment:

____

____

a) What reasons do these approved teachers give for not accepting teaching positions?

____

____

28. What might be some good methods for recruiting teachers in the areas where they are needed most?

____

____

FINALLY, I'D LIKE TO ASK YOU A FEW QUESTIONS ABOUT LAWS, ISSUES, AND TRENDS WHICH MAY EFFECT VOCATIONAL EDUCATION IN THIS STATE.

29. Have any federal or state laws affected your job and made it easier or harder?
Yes ___ No ___ Don't Know ___ Other ___

a) Which laws?

____

____

b) How have they affected your job?

____

____

30. Do you see any other issues or trends which will have an effect on your job? E.g.:

Chapter 766 on Special Education: ______________________________

____

Proposition 2 1/2: ____

____

CETA Reauthorization: ____

____

Higher Education Reorganization: ______________________________

____

Private Industry Councils: ______________________________

____

Block Grants to States: ______________________________

____

Other: ______________________________________

____

31. In your opinion, what policies or practices are most important in order to provide the state with qualified and effective vocational teachers?

____

____

• • •

This section if for individuals directly associated with an IHE offering coursework as part of the teacher training component of the approval process. These questions concern the coursework, the staffing, and the organization at the IHE's.

32. Who has responsibility for administering vocational education coursework here?

a) Name: ______________________________________

b) Title: ______________________________________

c) Organizational Position: ____________________________

d) Description of Duties: ____________________________

33. a) Would you say that the instructors here who teach vocational courses are mostly full-time or part-time instructors?

Explain/Comment:

____

____

b) Would you say that the instructors here who teach vocational courses are tenured or non-tenured?

Explain/Comment:

____

____

c) To what department or departments do the instructors here who teach vocational courses belong?

Explain/Comment:

d) What proportion of the instructors here who teach vocational courses are administrators or teachers at vocational schools?

Explain/Comment:

Do you have a list of approved instructors for vocational teacher training courses that I could take with me (past year, current year, next year)?

34. What are the requirements at this school for teaching vocational courses?

Explain/Comment:

35. What vocational teacher training programs or courses are offered at this college?

List/Explain/Comment:

a) Of those courses offered, which are acceptable toward the eighteen credits required for approval?

List/Explain/Comment:

36. What changes in your programs or courses would help produce better vocational teachers?

37. a) How do vocational teachers who come here for coursework get information about which courses are required?

Explain/Comment:

____

____

b) How do vocational teachers who come here for coursework get information about which courses are best for their program of studies?

Explain/Comment:

____

____

c) How do vocational teachers who come here for coursework get information about which courses are best for their future plans?

Explain/Comment:

____

____

38. Who counsels students who are taking coursework toward approval as a vocational teacher?

Explain/Comment:

____

____

39. a) Do you conduct any type of student needs assessment for vocational teachers on a regular basis?
Yes ___ No ___ Don't Know ___ Other ___

b) Have you ever conducted any type of student needs assessment for vocational teachers?
Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

40. Are vocational teachers taking courses assessed somehow in terms of what they need to be better teachers?
Yes ___ No ___ Don't Know ___ Other ___

Explain/Comment:

____

____

41. How many people who register for coursework to meet vocational teacher approval requirements fail or drop out because they cannot do college level academic work?

Explain/Comment:

42. How would you describe the mix of students in the various required teacher training programs in terms of vocational students versus non-vocational students?

Explain/Comment:

43. What kind of flexibility or choices are available to the vocational teacher who is doing required coursework?

Explain/Comment:

44. To what extent are the following issues addressed in the vocational teacher training courses or programs?

Special Education:

Bilingual Education:

Sex Equity:

RECRUITING MINORITIES AS VOCATIONAL TEACHERS

45. What are your policies concerning the transfer of vocational course or program credits?

Explain/Comment:

a) How might they be improved?

46. At present, the coursework associated with the vocational teacher approval process is provided by a number of colleges.

a) Why should the colleges continue to offer vocational courses in the future?

b) Why might the colleges decline to offer vocational courses in the future?

47. Do you know of any changes in the type or the content of the required courses for vocational teachers in the last five years?

VOCATIONAL TEACHER
TRAINING PROJECT

Summer 1981

COMMENTS:

Interview #

	MO	DA
Date:		
Time: Start		
End		

By:

NAME LABEL

PHONE NUMBER

INSTITUTION

TITLE

OTHER FUNCTIONS

APPENDIX C

STUDY QUESTIONNAIRE

021 7/81

λ LOGOS
RESEARCH INSTITUTES, Inc.
1185 No. Pleasant St. • Amherst, Massachusetts 01002
(413) 549-0101

(1-4)

MASSACHUSETTS
VOCATIONAL TEACHER QUESTIONNAIRE
SUMMER 1981

INSTRUCTIONS: For most of the questions, please circle the NUMBER next to your answer. For other questions, we ask you to enter your answer directly in the box provided. For example:

Q. What is your sex?

1. Male
[✓ 2. Female]

Q. What is your age? 3 | 2

Please leave the column on the right of the page blank. It will be used to code your answers later.

PART I: VOCATIONAL TEACHING EXPERIENCE

Questions in this section are about your status as a vocational teacher.

1. Will you be **teaching** a vocational course in a secondary school in the fall? (Circle One)

1. Yes
   If Yes → a. I will be teaching at
   ________________ (name of school)
   ________________ (name of town)

2. No
   If No → b. What is the main reason you will not be teaching in the fall? (Circle only one)
   01. Working full-time in trade.
   02. Never asked to teach by a school.
   03. Other school position (e.g. counseling, administration).
   04. My teaching position was cut.
   05. Tired of teaching.
   06. Other: ________________ *(Please Specify)*

3. *I don't know yet.*

2. Do you have provisional approval or full approval to teach in your trade? (Circle one.)
   1. Provisional approval
   2. Full approval
   3. Neither

3. *In what trade area(s) do you have instructor approval?*

Enter the appropriate 3-character code to indicate both instructor and trade area. For example: a trade and industry instructor in automotive body repair would enter code T | O | 1

1) ☐ 2) ☐ 3) ☐

DO NOT WRITE IN THIS COLUMN

(5) ____
(6-8) ____
(9-11) ____
(12-13) ____
(14) ____
(15-17) ____
(18-20) ____
(21-23) ____

DO NOT WRITE IN THIS COLUMN

4. *Do you have any approvals as a vocational administrator?*

1. Yes
   If yes → c. What have been your **most recent areas of approval? (Refer to** enclosed list of approval codes and enter the appropriate codes. Enter up to six areas).

   Most Recent ☐ ☐ ☐

   ☐ ☐ ☐ Least Recent

2. No

(24) ____
(25-27) ____
(28-30) ____
(31-33) ____
(34-36) ____
(37-39) ____
(40-42) ____

5. How many years have you taught vocational courses for Grades 9-12? (Write directly in the box.) ☐

(43-44) ____

6. How many years TOTAL have you worked in your trade (outside of teaching) including any trade time in the military? (Write directly in the box) ☐

(45-46) ____

PART II: CONCERNING THE REQUIRED TEACHER TRAINING COURSES FOR FULL APPROVAL AS A VOCATIONAL INSTRUCTOR

Questions in this section are about your experiences taking the required coursework towards complete approval as a vocational teacher.

7. How many of the required credits have you completed? (Enter 88 if you don't know.) ☐

(47-48) ____

IF YOU HAVE NOT TAKEN ANY OF THE REQUIRED COURSES YET, SKIP TO QUESTION #16.

8. Where have you taken your teacher training courses? (Circle all that apply.)

1. Boston State College
2. Boston University
3. Fitchburg State College
4. Mass Maritime Academy
5. U/Mass at Amherst
6. Westfield State College
7. Other ____________
   (Please Specify)

(49) ____
(50) ____
(51) ____
(52) ____
(53) ____
(54) ____

9. Overall, concerning the required teacher-training credits: (Circle one in each row.)

(55) ____

	Never	Sometimes	Usually	Always	
a. Did the course(s) meet at a convenient time of day?	1	2	3	4	(56) ____
b. Did the course(s) meet on a convenient day(s) of the week?	1	2	3	4	(57) ____
c. Was travel to the course(s) a problem?	1	2	3	4	(58) ____

10. Concerning the mix of participants in the required teacher-training courses: How many were vocational teachers? (Circle One)

1. All
2. Most (more than 75%)
3. Many (more than half)
4. Some (less than half)

(59) ____

DO NOT WRITE IN THIS COLUMN

11. Of all the courses you have taken for vocational teacher approval, were there any which were **not accepted** for approval? (Circle one)

    1. Yes, at least one course was not accepted. (60) ____
    2. No
    3. Some courses are still pending approval.
    4. Don't know.

12. Have you ever tried transfering the vocational teacher training credits toward another degree program? (Circle one)

    1. Yes, and I had no problems getting them transferred. (61) ____
    2. Yes, but I was unable to get them transferred.
    3. No.

13. To what extent do the following statements **generally** describe the required teacher-training coursework you have taken for vocational teacher approval? (Circle one in each row.)

	Not At All	**Some What**	**A Great Deal**	**Don't Know**	**Does Not Apply**	
a. The course material was useful in teaching my own students.	1	2	3	8	9	(62) ____
b. Experiences of class participants were used as teaching examples or in class discussion.	1	2	3	8	9	(63) ____
c. The level at which the courses are conducted was good for me.	1	2	3	8	9	(64) ____
d. The instructor was well prepared for class.	1	2	3	8	9	(65) ____
e. The instructor knew the subject matter well.	1	2	3	8	9	(66) ____
f. The instructor was sensitive to individual interests, needs, and values.	1	2	3	8	9	(67) ____
g. The same material was often covered in more than one required course.	1	2	3	8	9	(68) ____
h. I had a say in determining course content or format.	1	2	3	8	9	(69) ____
i. I felt free to express ideas in class.	1	2	3	8	9	(70) ____

14. To what extent have the following **issues** for teachers been discussed in the required coursework you have taken for vocational teacher approval? (Circle one in each row.)

	Not At All	Some What	A Great Deal	Don't Know	Does Not Apply	IN THIS COLUN
a. Issues concerning sex stereotyping of shop students were discussed.	1	2	3	8	9	(71)
b. Language and cultural differences among shop students were discussed.	1	2	3	8	9	(72)
c. Issues concerning handicapped students in shops were discussed.	1	2	3	8	9	(73)
d. Issues concerning student discipline in the shop were discussed.	1	2	3	8	9	(74)
e. Issues concerning economic trends affecting shop students were discussed.	1	2	3	8	9	(75)
f. Issues concerning job placement of shop students were discussed.	1	2	3	8	9	(76)
g. The relationship between vocational and academic education was discussed.	1	2	3	8	9	(77)
h. Instilling self-worth in vocational students was discussed.	1	2	3	8	9	(78)
i. Issues concerning shop students cooperating with others in shop were discussed.	1	2	3	8	9	(79)
						(80) 1

End Deck 1

Begin Deck 2

(1-4) ____

15. How useful were the following **Teaching Techniques** and **Course Materials** in the required coursework you have taken? (Circle one in each row).

	Not At All Useful	Somewhat Useful	Very Useful	Don't Know	Does Not Apply	
a. Lectures	1	2	3	8	9	(5)
b. Guest Speakers	1	2	3	8	9	(6)
c. Group Discussions	1	2	3	8	9	(7)
d. Role Playing/Experiential Exercises	1	2	3	8	9	(8)
e. Practical Demonstrations	1	2	3	8	9	(9)
f. Texts/Books	1	2	3	8	9	(10)
g. Handouts/Articles	1	2	3	8	9	(11)
h. Recommended Reading/Library	1	2	3	8	9	(12)
i. Films/AV	1	2	3	8	9	(13)

PART III: THE TEACHER APPROVAL PROCESS

Questions in this section will be about the entire teacher approval process from years in trade to full approval as a teacher.

16. Who approved the courses you have taken? (Circle one) (14-15) ____

01. Department of Education Central Office Representative
02. Department of Education Center Representative
03. Vocational School Administrator
04. College Representative
05. Other ____________________
(Please Specify)

08. Don't Know
09. Does Not Apply

17. **When** did you first find out what the requirements are for approval as a vocational teacher? (Circle one only).

01. Before I took the competency tests.
02. After I took the competency tests.
03. After I had already started to take courses.
04. Other ______________________________
(Please Specify)

18. How did you **first** find out about the requirements for vocational teacher approval? (Circle one only.)

01. From my union; or others in my trade.
02. From a vocational teacher(s)
03. From a vocational school administrator.
04. From a college.
05. From the Central Office of the Department of Education.
06. From the Regional Center of the Department of Education.
07. Other ______________________________
(Please Specify)

19. How did you first find out what **courses** are required for vocational teacher approval? (Circle one only.)

01. Department of Education Central Office Representative
02. Department of Education Regional Center Representative
03. College Staff Member
04. College Brochure or Mailing
05. Vocational Teacher
06. Vocational School Staff Member
07. Other: ______________________________
(Please Specify)

20. Did you begin taking the required teacher-training courses before you took the competency tests? (Circle one)

1. Yes 2. No

21. Did you clearly know what the requirements for vocational teacher approval were when you started the process; i.e. before you took the competency tests? (circle one)

1. Yes, very clearly.
2. To some extent.
3. Had no idea.

22. To what extent was travel to the sites for the competency tests in your trade area a problem? (Circle one in each row)

	Not At All	Some What	A Great Deal	Not Applicable
a. For the written exam?	1	2	3	9
b. For the practical exam?	1	2	3	9

23. When is it most convenient for you to take required coursework either for approval credit or for professional development? (Circle one each for a. for b, and for c.)

a. Time of year?
   1. Fall Semester
   2. Spring Semester
   3. Summer Session

b. Time of Day?
   1. Mornings
   2. Afternoons
   3. Evenings

c. Time during the week?
   1. Weekdays
   2. Saturdays

24. How difficult were each of these vocational teacher requirements to satisfy? (Circle one in each row).

	Not At All	Some what	Great Deal	Don't Know	Does Not Apply
a. 6 years trade experience	1	2	3	8	9
b. Written Competency Test	1	2	3	8	9
c. Practical Competency Test	1	2	3	8	9
d. Teacher-Training Coursework	1	2	3	8	9
e. Professional Improvement Requirements	1	2	3	8	9

DO NOT WRITE IN THIS COLUMN

(16-17) ________
(18-19) ________
(20-21) ________
(22) ________
(23) ________
(24) ________
(25) ________
(26) ________
(27) ________
(28) ________
(29) ________
(30) ________
(31) ________
(32) ________
(33) ________

DO NOT WRITE IN THIS COLUMN

25. How important or necessary are each of these vocational teacher requirements to insure high quality instruction in the shop? (Circle one in each row)

	Not At All	Some what	A Great Deal	Don't Know	Does Not Apply	
a. 6 years trade experience	1	2	3	8	9	(34) ______
b. Written Competency Test	1	2	3	8	9	(35) ______
c. Practical Competency Test	1	2	3	8	9	(36) ______
d. Teacher Training Coursework	1	2	3	8	9	(37) ______
e. Professional Improvement Requirements	1	2	3	8	9	(38) ______

26. To what extent do you feel you have been adequately prepared to design or revise a proper curriculum to teach your trade? (Circle one.) (39) ______

    1. Not at all
    2. Somewhat
    3. *A Great Deal*
    8. *Don't Know*
    9. *Does Not Apply*

27. To what extent do you feel you have been properly informed of the health and safety requirements for teaching your trade? (Circle one.) (40) ______

    1. Not at all
    2. Somewhat
    3. A Great Deal
    8. Don't Know
    9. Does Not Apply

28. Please indicate how much you agree or disagree with the following statements. (Circle one in each row.)

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Does Not Apply	
a. The courses I have taken for vocational teacher approval have provided me with a better idea of how to teach.	1	2	3	4	5	9	(41) ______
b. Having 6 years trade experience and passing the written and practical competency tests is enough preparation to teach shop.	1	2	3	4	5	9	(42) ______
c. I think student teaching before teaching shop students should be a requirement in the approval process.	1	2	3	4	5	9	(43) ______
d. I have better job security as a vocational teacher than I have working in my trade.	1	2	3	4	5	9	(44) ______
e. Overall, I will be financially no worse off as a vocational teacher than if I remained in the trade.	1	2	3	4	5	9	(45) ______
f. My decision to become a vocational teacher has been a good one.	1	2	3	4	5	9	(46) ______
g. I have had a tough time adjusting from being a trades person to being a vocational teacher.	1	2	3	4	5	9	(47) ______
h. Teaching vocational school is a lot more demanding than I thought it would be.	1	2	3	4	5	9	(48) ______

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Does Not Apply	DO NOT WRITE IN THIS COLUMN
I. Vocational teachers are not much different than teachers in general.	1	2	3	4	5	9	(49) ________
j. I had difficulty getting through the vocational teacher approval process.	1	2	3	4	5	9	(50) ________
k. The documentation of prior work experience that is necessary for approval was difficult to obtain.	1	2	3	4	5	9	(51) ________
l. Information about the competency tests helped prepare me to take them.	1	2	3	4	5	9	(52) ________
m. Taking the required coursework has posed a financial burden for me.	1	2	3	4	5	9	(53) ________
n. Laws designed to end sex discrimination have not made it harder for me to teach vocational classes.	1	2	3	4	5	9	(54) ________
o. Laws ensuring access to vocational education for handicapped students have not proved burdensome to me in the classroom.	1	2	3	4	5	9	(55) ________
p. Laws requiring me to teach students with other languages and cultures have not proved burdensome to me in the classroom.	1	2	3	4	5	9	(56) ________
q. It is likely that in 5 years I will be a vocational teacher.	1	2	3	4	5	9	(57) ________
r. I need(ed) to know more about issues concerning special education from my required 18 credits of coursework.	1	2	3	4	5	9	(58) ________
s. I need(ed) to know more about issues concerning sex stereotyping from my required 18 credits of coursework.	1	2	3	4	5	9	(59) ________
t. I need(ed) to know more about Affirmative Action issues from my required 18 credits of coursework.	1	2	3	4	5	9	(60) ________
u. Additional recruitment procedures should be used to seek out qualified minorities or bilingual people who are potential vocational teachers.	1	2	3	4	5	9	(61) ________
v. Additional support services should be given to qualified minorities or bilingual people who are potential vocational teachers.	1	2	3	4	5	9	(62) ________

PART IV: BACKGROUND

DO NOT WRITE IN THIS COLUMN

Questions in this section will concern the background and the ideas of those completing this form.

29. How did you **first** find out about how to become a vocational teacher? (Circle one only.)

(63-64) __________

01. Fellow Tradesperson
02 Vocational School Teachers
03. Vocational School Administrators
04. College Personnel
05. Union
06. Newspaper Ad
07. Other ____________________________________
(Please Specify)

30. What was the **most** important reason you became a vocational teacher (Circle one.)

(65-66) __________

01. Money
02. Job Security
03. Desire to Teach
04. Professional Growth
05. Easier Job
06. Job less physically demanding.
07. Other ____________________________________
(Please Specify)

31. For the 60 required hours of annual professional improvement, about what percent of the time do you devote to keeping up with your trade and about what percent of the time do you devote to improving your teaching skills? (Please write directly in the box.)

a. Trade Skills ☐☐☐ % (67-69) __________

b. Teaching Skills ☐☐☐ % (70-72) __________

Skip to 80

Total = 1 0 0 % (80) 2

End Deck 2

32. In what ways do you fulfill the 60 required hours of annual professional improvement? (Circle **all** that apply.)

Begin Deck 3

(1-4) __________

1. Fitchburg State College Professional Improvement Conference (5) __________
2. Working in trade when not teaching. (6) __________
3. Further Coursework (7) __________
4. Inservice Training Days (8) __________
5. Participation in Cooperative Education Programs (9) __________
6. Other Workshops/Seminars (10) __________
7. Trade Advisory Committee Meetings (11) __________
8. Other ____________________________________
(Please Specify)

33. About how many students are enrolled in the shop area that you teach in grades 9-12? (Write numbers directly in boxes for this question.)

a. Estimated number of students ☐☐☐ (13-15) __________

b. *About what* **PERCENT** of these students are female? ☐☐☐ % (16-18) __________

c. About what **PERCENT** of these students are minority group members? ☐☐☐ % (19-21) __________

d. About what **PERCENT** of these students have special needs (i.e. handicapped)? ☐☐☐ % (22-24) __________

34. What is your sex? (Circle one) (25) __________

1. Male 2. Female

DO NOT WRITE IN THIS COLUMN

35. What is your age? (Please write directly in the box) ☐☐

(26-27) ______

36. To what racial or ethnic group do you belong? (Circle one.)

01. White, non-hispanic
02. Black, non-hispanic
03. Hispanic
04. Cape Verdean/Portuguese
05. Native American (Indian) or Alaskan Native (Eskimo)
06. Asian American or Pacific Islander
07. Other ______________________________
(Please Specify)

(28-29) ______

37. Are you fluent in a language other than English?

1. Yes 2. No

If Yes → a. I am fluent in ______________________________

____

____

(Please specify the language) If more than 2, list the 2 in which you consider yourself to be most fluent.

(30) ______

(31-32) ______

(33-34) ______

38. How did you receive your high school diploma? (Circle one.)

1. Public trade or vocational school
2. Private trade or vocational school
3. Public comprehensive high school
4. Private comprehensive high school
5. G.E.D., Military, or other

(35) ______

39. How many years of education have you completed? (Circle one.)

1. Completed high school or G.E.D. (12 years)
2. Associate Degree or some college (13-15 years)
3. Bachelor's Degree (16 years)
4. Some Graduate level work
5. Completed Master's degree
6. Some work toward doctorate
7. Completed doctorate degree

(36) ______

40. When you first began taking the required teacher training courses, how long had it been since you last attended any school? (Please write directly in box*)

*If less than 1 year, enter 01
*If you don't know, enter 88

☐☐ # of years

(37-38) ______

41. What were you doing before you decided to become a vocational teacher? (Circle one.)

01. Working in the same trade area.
02. Working in a different trade area.
03. In school.
04. In the military.
05. Unemployed.
06. Other ______________________________
(Please Specify)

(39-40) ______

42. Are you physically handicapped? (Circle one.)

1. Yes 2. No

If yes: → a. To what extent have courses required for vocational teacher approval been easily accessible to you? (Circle one.)

1. Not at all.
2. Somewhat.
3. *A Great Deal.*

(41) ______

(42) ______

DO NOT WRITE IN THIS COLUMN

43. In the required courses you have taken toward vocational teacher approval, was there anything which should have been included and was not? (List up to three)

(43-44) ____

(45-46) ____

(47-48) ____

44. In the required courses you have taken toward vocational teacher approval, was there anything which should have been de-emphasized or dropped as unnecessary? (List up to three)

(49-50) ____

(51-52) ____

(53-54) ____

45. To what extent do you agree or disagree with the following statement? (Circle one.)

> "The major goal of vocational education is to prepare students to seek, acquire and succeed in a specific trade, technical, or occupational field requiring specialized or technical skills for entry into that field."

1. Strongly Disagree
2. Disagree
3. Neither Disagree nor Agree
4. Agree
5. Strongly Agree

(55) ____

46. Briefly list what you think should be the **most important** goals of vocational education. (List up to three.)

(56-57) ____

(58-59) ____

(60-61) ____

OPTIONAL: We would like to obtain as much additional information as possible regarding your *experience with the vocational teacher approval process. To do this, we will be conducting telephone interviews. If you would like to talk with us, please fill in the* following information and we will try to telephone you.

Name (Please Print): ____

Phone Number/Days: (   ) ____

Phone Number/Evenings: (   ) ____

(62) ____

Skip to 80

(80) 3

WE THANK YOU FOR THE TIME YOU SPENT TO COMPLETE THIS QUESTIONAIRE.